ORDER NO. HAD8704074C9

Service Manual

Tuner

QUARTZ Synthesizer AM/FM Stereo Tuner (ST-G45A)

QUARTZ Synthesizer LW/MW/FM Stereo Tuner (ST-G45AL)

ST-G45A
ST-G45AL

Color

(S) .....Silver Type
(K) .....Black Type

(ST-G45A)

(ST-G45AL)

Area

color	area
(S) (K)	(EX).....Continental Europe. (ST-G45A/G45AL)
(S) (K)	(EK).....United Kingdom. (ST-G45AL)
(S) (K)	(EB).....Belgium. (ST-G45AL)
(S) (K)	(EH).....Holland. (ST-G45A)
(S) (K)	(EF).....France. (ST-G45AL)
(S) (K)	(XA).....Asia, Oceania, Latin America, Middle Near East and Africa. (ST-G45A)
(S) (K)	(XL).....Australia. (ST-G45A)
(S) (K)	(PA).....For East PX. (ST-G45A)
(S) (K)	(PE).....European Military. (ST-G45A)
(S) (K)	(EG).....F.R Germany. (ST-G45A)
(S) (K)	(Ei).....Italy. (ST-G45A)

SPECIFICATIONS

(DIN 45 500)

■ FM TUNER SECTION

Frequency range	87.50~108.00 MHz
Sensitivity	1.5 μV (IHF, usable)
S/N 30 dB	1.3 μV (75Ω)
S/N 26 dB	1.2 μV (75Ω)
S/N 20 dB	0.9 μV (75Ω)
IHF 46 dB stereo quieting sensitivity	28 μV/75Ω
Total harmonic distortion	
MONO (normal)	0.05%
STEREO (normal)	0.1%
S/N	
MONO	72 dB (80 dB, IHF)
STEREO	65 dB (73 dB, IHF)
Frequency response	4 Hz~18 kHz, +0.5 dB~−1.5 dB
Alternate channel selectivity	
normal ±400 kHz	65 dB
Capture ratio	1.0 dB
Image rejection at 98 MHz	55 dB
IF rejection at 98 MHz	90 dB
Spurious response rejection at 98 MHz	80 dB
AM suppression	55 dB
Stereo separation	
1 kHz	50 dB
10 kHz	40 dB
Carrier leak	
19 kHz	−55 dB (−60 dB, IHF)
38 kHz	−40 dB (−45 dB, IHF)
Channel balance (250 Hz~6,300 Hz)	±1.0 dB
Limiting point	0.85 μV
Bandwidth	
IF amplifier	180 kHz
FM demodulator	1000 kHz
Antenna terminals	75Ω (unbalanced)

■ AM TUNER SECTION (ST-G45A)

Frequency range	
(For Europe, South Africa and Australia)	
	522 kHz~1611 kHz (9 kHz-step)
	530 kHz~1620 kHz (10 kHz-step)
(For Saudi Arabia and others)	
	531 kHz~1602 kHz (9 kHz-step)
	530 kHz~1600 kHz (10 kHz-step)
Sensitivity (S/N 20 dB)	20 μV, 300 μV/m
Selectivity at 999 kHz (±9 kHz)	50 dB
Image rejection at 999 kHz	40 dB
IF rejection at 999 kHz	60 dB

Technics

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P.O. Box 288, Central Osaka Japan

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Matsushita Electric Trading Co., Ltd.
6th Floor, World Trade Center Bldg.,
No. 4-1, Hamamatsu-cho 2-Chome, Minato-ku,
Tokyo 105, Japan

■ AM TUNER SECTION (ST-G45AL)

Frequency range	
MW	522 kHz~1611 kHz (9 kHz-step)
	530 kHz~1620 kHz (10 kHz-step)
LW	155 kHz~353 kHz (9 kHz-step)
	153 kHz~351 kHz (−2 kHz shift)
Sensitivity (S/N 20 dB)	
MW	20 μV, 300 μV/m
LW	50 μV
Selectivity (±9 kHz)	
MW (at 999 kHz)	50 dB
LW (at 254 kHz)	50 dB
Image rejection	
MW (at 999 kHz)	40 dB
LW (at 254 kHz)	40 dB
IF rejection	
MW (at 999 kHz)	60 dB
LW (at 254 kHz)	35 dB

■ GENERAL

Output voltage	0.3V (0.6V IHF)
Power consumption	9W
Power supply	
For United Kingdom and Australia	AC 50 Hz/60 Hz, 240V
For continental Europe	AC 50 Hz/60 Hz, 220V
For others	AC 50 Hz/60 Hz, 110V/127V/220V/240V
Dimensions (W×H×D)	430 × 64 × 241 mm
	(16-30/32" × 2-17/32" × 9-1/2")
Weight	2.2 kg
	(4.84 lb.)

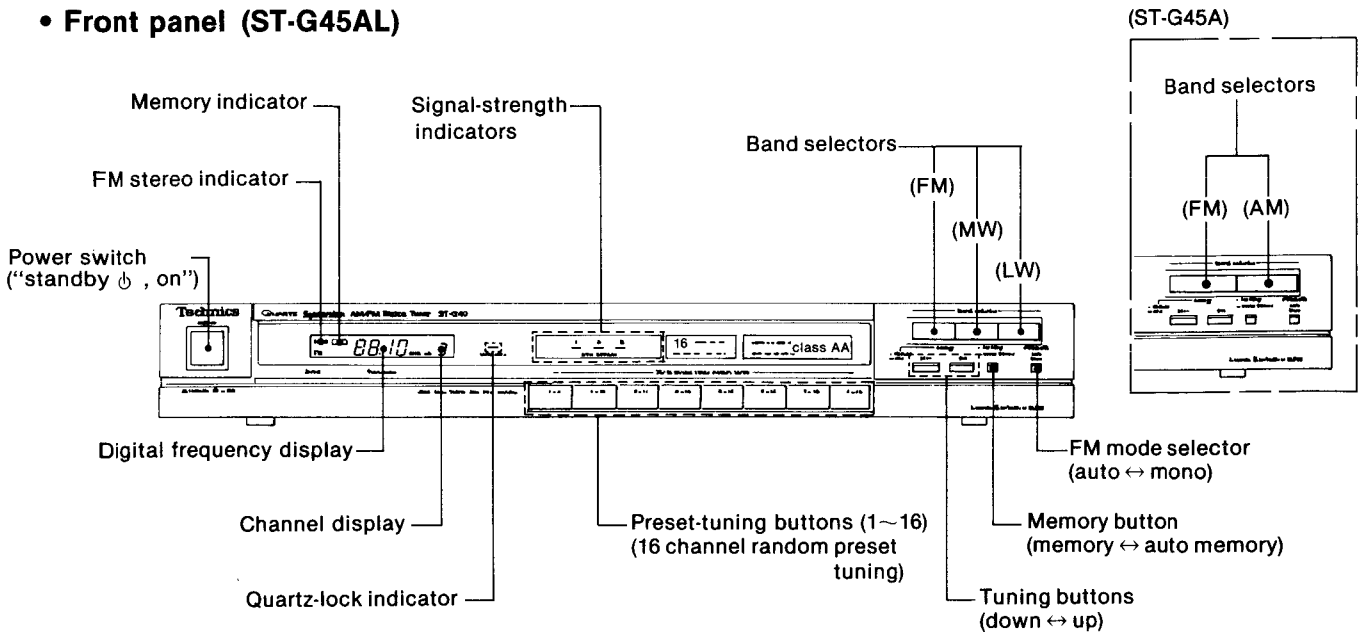
Notes:
- Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).
- Specifications are subject to change without notice. Weight and dimensions shown are approximate.

■ CONTENTS

	Page
LOCATION OF CONTROLS	2
ACCESSORIES	3
DISASSEMBLY INSTRUCTIONS	4
MEASUREMENTS AND ADJUSTMENTS	5
FUNCTION OF TERMINAL (IC901: UPD1718G514)	8
CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM (ST-G45A)	9
CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM (ST-G45AL)	11
BLOCK DIAGRAM	13
RESISTORS AND CAPACITORS	15
REPLACEMENT PARTS LIST	16
TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES	17
DESCRIPTION OF LCD PANEL	18
SCHEMATIC DIAGRAM (ST-G45A)	19
SCHEMATIC DIAGRAM (ST-G45AL)	21
REPLACEMENT PARTS LIST	25
EXPLODED VIEW	27

■ LOCATION OF CONTROLS

• Front panel (ST-G45AL)



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ORDER NO. HAD8704074C9-A

Tuner

DEUTSCH

Verwenden Sie bitte diese Broschüre Zusammen mit der Service-Anieitung für das Modell Nr. ST-G45A/G45AL

■ MESSUNGEN UND JUSTIERUNGEN

AM/FM(ST-G45A) LW/MW/FM(ST-G45AL)

Einstellungen der Bedienelemente und zu verwendende Geräte.

- MW und UKW Meßsender (MW und UKW Nebsender)
- Stereo-Modulator
- Verzerrungs-Analystator
- Elektronische Wechselstrom-und Gleichstrom-Voltmeter(EVM)
- Keramischer Kondensator(200pF)
- Oszilloskop
- Frequenzzähler
- Drosselspule(100μH)
- Widerstand(100KΩ)

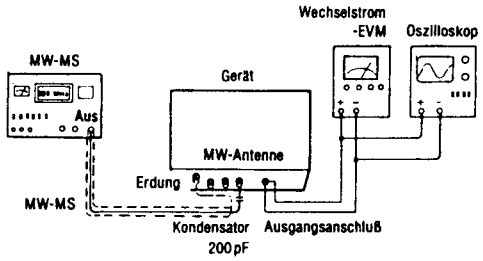
Anmerkung: Für **T201** (AM ZFT), **L203** (AM (MW)-OSZ, -Spule), **L251** (LW-Antennenspule), **L303** (L.P.F.) und **L301, L302** (L.P.F.), werdeven justiert Ersatzteil geliefert. Dien Kern dieses Teils daher nicht drehen.

AM(MW)-HF-JUSTIERUNG

1.Der Testaufbau ist in der Abbildung gezeigt.
2.Stellen Sie die Einheit auf **"AM(MW)"** Betrieb.
3.Radio und Signalgenerator auf **612kHz** einstellen.
4.**L202** auf maximale Ausgangsleistung adgleichen.
5.Radio und Signalgenerator auf **1503kHz** einstellen.
6.**CT201** auf maximale Ausgangsleistung abgleichen.
7.Die Schritte 3 ~ 6 wiederholen.

Anmerkung:
Der Antenneneingang-Signalpegel muß so niedrig wie möglich und frei von automatischer werstärkungsregelung (AGC) sein.

ZUSTAND DES MW-MESSENDERS
Modulation 30%
Modulationsfrequenz 400Hz

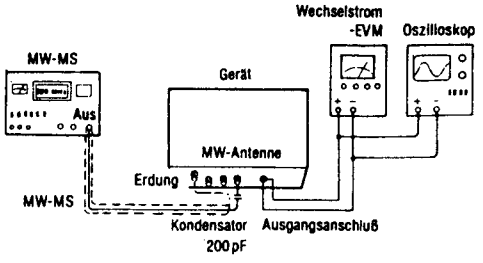


LW-HF-JUSTIERUNG (Nur ST-G45AL)

1.Der Testaufbau ist in der Abbildung gezeigt.
2.Stellen Sie die Einheit auf **"LW"** Betrieb.
3.Die Radiofrequenzanzeige und den Messender auf **155kHz** einstellen.
4.**L252** auf maximale Ausgangsleistung abgleichen.
5.Die Radiofrequenzanzeige und den Messender auf **353kHz** einstellen.
6.**CT251** auf maximale Ausgangsleistung abgleichen.
7.Die Schritte 3 ~ 6 wiederholen.

Anmerkung:
Der Antenneneingang-Signalpegel muß so niedrig wie möglich und frei von automatischer werstärkungsregelung (AGC) sein.

ZUSTAND DES MW-MESSENDERS
Modulation 30%
Modulationsfrequenz 400Hz



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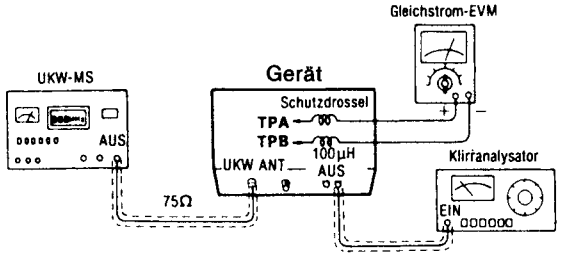
UKW-MONO-VERZERRUNGS-JUSTIERUNG

1.Der Testaufbau ist in der Abbildung gezeigt.
2.Stellen Sie die Einheit auf **"FM(UKW)"** Betrieb.
3.Die Radiofrequenzanzeige und den Messender auf **100.10MHz** einstellen.
4.Den Kern von **T101** so justieren, daß die im Signalzustand gemessene Spannung **0mV (0±10mV)** im 150mV-Bereich beträgt.
5.**T102** so justieren, daß der Verzerrungsfaktor des linken Kanals minimal wird.
6.Schritte 4 und 5 einige Male wiederholen.
7.Versichern Sie sich, daß die Verzerrungsfaktoren von Kanal L und Kanal R annähernd gleich sind und auf ein Minimum gehalten sind.

Anmerkung:
Für die Justierung ist ein Schraubendreher aus Kunststoff zu verwenden.

ZUSTAND DES UKW-MESSENDERS
Modulation 100%
Modulationsfrequenz 1kHz
Ausgangspegel 66dB



TPA = TP102, TPB = TP101

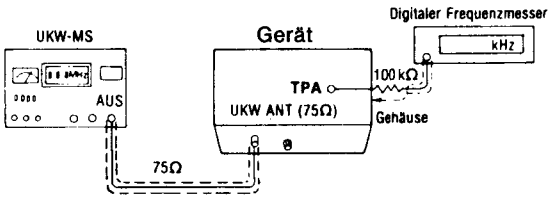
MPX-SGO-JUSTIERUNG

1.Der Testaufbau ist in der Abbildung gezeigt.
2.Den UKW-Bertriebsart-Wahlshalter in die **"on/auto"** Position stellen.
3.Radio und Meßsender auf **100.10MHz** einstellen.
4.**VR302** auf **19kHz ± 30Hz** auf der Frequenzzähleranzeige justieren.

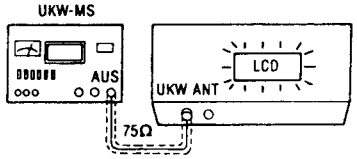
● VERWENDUNG EINES ALTERNATIVSYSTEMS

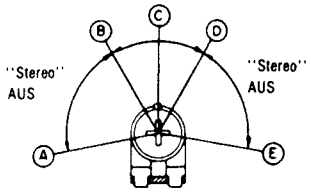
1.Stereosignal vom Meßsender eingeben oder eine Stereo-Sendung empfangen.
2.**VR302** justieren, bis die Stereo-Anzeige aufleuchtet. Den Arm von **VR302** mit Lack sichern, wie in der Abbildung gezeigt.

ZUSTAND DES UKW-MESSENDERS
Modulation 0%
Modulationsfrequenz 0
Ausgangspegel 66dB



TPA = TP301, Digitaler Frequenzmesser:19.00 kHz





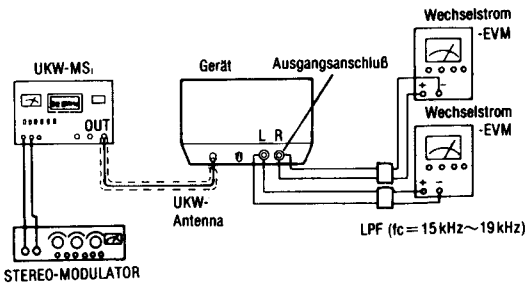
VR302

Ⓐ－Ⓑ,
Ⓓ－Ⓔ..... "Stereo" AUS Stellung
Ⓑ－Ⓓ..... "Stereo" EIN Stellung (Anzeigebeleuchtung)
Ⓒ..... Einstellpunkt des pilotschaltkreis'

TRENNUNGS-JUSTIERUNG

1.Der Testaufbau ist in der Abbildung gezeigt.
2.Stellen Sie die Einheit auf **"FM"** Betrieb.
3.Die Radiofrequenzanzeige und den Messender auf **100,10MHz** einstellen.
4.**VR301** so justieren, daß der R-Ausgang minimal ist, wenn der Stereomodulator im L-Betriebszustand (Linker Kanal moduliert) ist.

ZUSTAND DES UKW-MESSENDERS
Modulation ....."L"order "R" Betriebsart 45%,Pilotssignal 10%
Modulationsfrequenz .....1kHz(Pilot 19kHz)
Ausgangspegel 66dB



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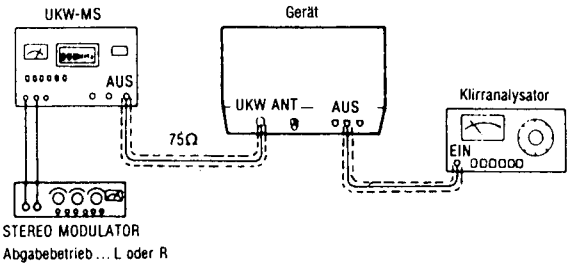
UKW STEREO KLIRRFAKTOR-JUSTIERUNG (Nur [EG])

1.Der Testaufbau ist in der Abbildung gezeigt.
2.Stellen Sie die Einheit auf **"FM(UKW)"** Betrieb.
3.Die Radiofrequenzanzeige und den Messender auf **100.10MHz** einstellen.
4.**T1** so justieren, daß der Verzerrungsfaktor des linken Kanals minimal wird.
5.überprüfen, daß die Verzerrungsfaktoren des linken und rechten Kanals fast gleich sind.

Anmerkung:
Für die Justierung ist ein Schraubendreher aus Kunststoff zu verwenden.

ZUSTAND DES UKW-MESSENDERS
Modulation .....”L”order ”R” Betriebsart 45%,Pilotssignal 10%
Modulationsfrequenz .....1kHz(Pilot 19kHz)
Ausgangspegel 66dB



FRANÇAIS

Ceci est à utiliser conjointement avec manuel d'entretien du modèle No. ST-G45A,G45AL

■ MEAURAGES ET REGLAGES

A.M./M.F. (ST-G45A)
LW/MW/M.F. (ST-G45AL)

Positionnements des commandes et équipement utilisé

- Générateur de signaux AM et FM (AM et FM-SG)
- Modulateur stéréophonique
- Analyseur de distorsion
- Oscilloscope
- Compteur de fréquence
- Bobine d'amortissement d'arrêt (100µH)
- Résistance (100kΩ)
- Condensateur céramique (200pF)
- Voltmètre électronique à C.A. et C.C. (EVM).

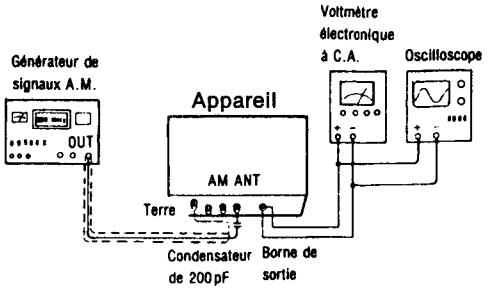
Nota: Pour **T201** (A.M.) F.I., **L203** (bobine oscil. de AM (MW), **L251** (bobine ANT LW), **L303** (L.P.F.) et **L301, L302** (L.P.F.), des éléments réglés sont fournis. Aussi, ne pas tourner les noyaux de ces pièces.

REGLAGE DE O.M.-H.F.

1.Le raccordement de l'équipement d'essai est montré sur l'illustration.
2.Régler l'appareil sur le mode **"AM(MW)"**.
3.Régler le cadran radio et le générateur de signaux sur **612kHz**.
4.Régler **L202** pour une sortie maximale.
5.Régler le cadran radio et le générateur de signaux sur **1503kHz**.
6.Régler **CT201** pour une sortie maximale.
7.Répéter les étapes 3 ~ 6.

Nota: Le niveau d'entrée d'antenne doit être aussi bas que possible étant libéré de la commande automatique de gain.

CONDITION DU GENERATEUR DE SIGNAUX AM
Modulation 30%
Modulationsfrequenz 400Hz



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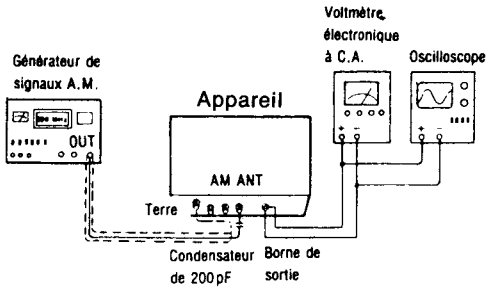
REGLAGE DE RE-LW (ST-G45AL seulement)

1.Le raccordement de l'équipement d'essai est montré sur l illustration.
2.Régler l'appareil sur le mode **"LW"**.
3.Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **612kHz.**
4.Régler **L252** pour une sortie maximale.
5.Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **353kHz.**
6.Régler **CT251** pour une sortie maximale.
7.Répéter les étapes 3 ~ 6.

Nota: Le niveau d entrée d'antenne doit étre aussi bas que possible étant libéré de la commande automatique de gain.

CONDITION DU GENERATEUR
DE SIGNAUX AM
Modulation 30%
Modulationsfrequenz 400Hz

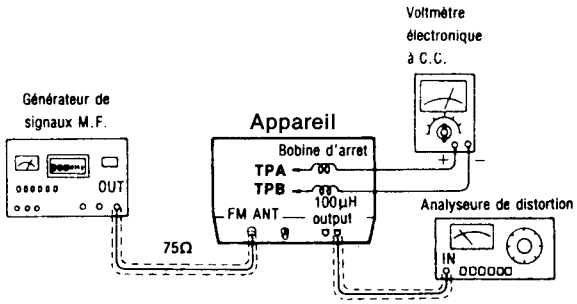


REGLAGE DE DISTORSION MONOPHONIQUE M.F.

1.Le raccordement de l'équipement d'essai est montré sur l'illustration.
2.Régler l'appareil sur le mode **"FM"**.
3.Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **100.10MHz**.
4.Régler le noyau de **T101** de telle sorte que la tension mesurée sur le mode de signaux soit de **0mV(0±10mV)** dans une plage de.150mV.
5.Ajuster **T102** de telle que le facteur de sistorsion du canal de gauche soit minimisé.
6.Répéter les étapes 4 et 5 quelques fois.
7.S'assurer que les facteurs de distorsion du canal de gauche et du canal de droite soient sensiblement les mêmes et au minimum.

Nota: Le tournevis de réglage utilisé devra ètre fait en résines.

CONDITION DU GENERATEUR DE SIGNAUX M.F.
Modulation 100%
Fréquenz de modulation....1kHz
Niveau de sortie.....66dB



TPA = TP102, TPB = TP101

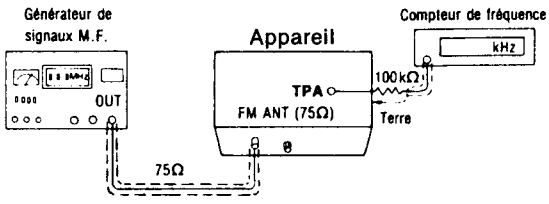
REGLAGE MULTIPLEX DE L'OSCILLATEUR COMMANDE PAR VARIATION DE TENSION

1.Le raccordement de l'équipement d'essai est montré sur la figure.
2.Régler l'appareil sur la position **"on/auto"**.
3.Régler le cadran radio et le générateur de signaux sur **100.10MHz**.
4.Ajuster **VR302** pour **19kHz ± 30Hz** sur le compteur de lecture de fréquences.

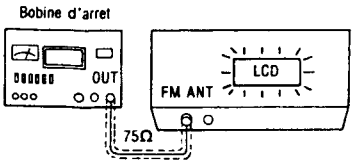
• EN UTILISANT UN SYSTEME ALTERNATIF

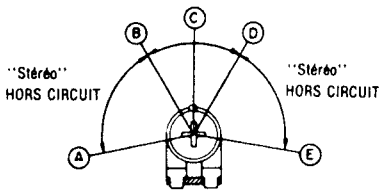
1.Applique un signal stéréo à partir du générateur ou recevoir une émission stéréo.
2.Ajuster **VR302** jusqu' à ce que l'indicateur stéréo s éclaire. Coller le bras de **VR302** comme il montré sur la figure.

CONDITION DU GENERATEUR DE SIGNAUX M.F.
Modulation 0%
Fréquenz de modulation....0
Niveau de sortie.....66dB



TPA = TP301
Compteur de fréquence:19.00 kHz





VR302

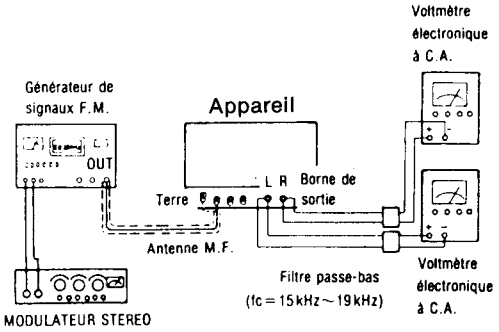
Ⓐ−Ⓑ,
Ⓓ−Ⓔ..... Position de HORS CIRCUIT "Stereo".
Ⓑ−Ⓓ..... Position de MISE EN CIRCUIT "Stereo". (Eciairage de l'indicateur)
Ⓒ..... Point de réglage du circuit pilote.

D

REGLAGE DE SEPARATION

1.Le raccordement de l'équipement d'essai est montré sur l'illustration.
2.Régler l'appareil sur le mode **"FM"**.
3.Ajuster le réglage de l'affichage de radioféquence et du générateur de signaux sur **100,10MHz**.
4.Ajuster **VR301** de telle sorte que la sortie de droite soite minimisée lorsque le modulateur stéréo est sur le mode **"G"**. (modulation de canal de gauche.)

CONDITION DU GENERATEUR DE SIGNAUX M.F.
Modulation .....Mode"G" ou mode"D" à 45%, Signal de commande à 10%
Fréquenz de modulation ....1kHz,Pilot(19kHz)
Niveau de sortie.....66dB

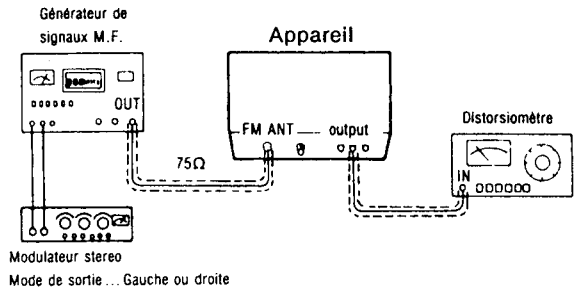


AJUSTEMENT DE LA DISTORSION STEREO FM ([EG] seulement)

1.Le raccordement de l'équipement d'essai est montré sur l'illustration.
2.Régler l'appareil sur le mode **"FM"**.
3.Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **100.10MHz**.
4.Ajuster **T1** de telle que le facteur de distorsion du canal de gauche soit minimisé.
5.Sássurer que les facteurs de distorsion du canal de gauche et du canal de droite soient sensiblement les mêmes l'un par rapport à l'autre.

Nota: Le tournevis de réglage utilisé devra être fait en résines.

CONDITION DU GENERATEUR DE SIGNAUX M.F.
Modulation .....Mode"G" ou mode"D" à 45%, Signal de commande à 10%
Fréquenz de modulation ....1kHz,Pilot(19kHz)
Niveau de sortie.....66dB



D

ESPAÑOL

Sirvase utilizarse junto con manual de servicio para el model No. ST-G45A,G45AL

■ MEDICIONES Y AJUSTES

AM/FM(ST-G45A) LW/MW/FM(ST-G45AL)

Posiciones de control y equipo usado.

- Generador de señales de AM y FM (AM y FM-SG)
- Voltimetro electrónico de CA y CC(EVM)
- Analizador de distorsiones
- Osciloscopio
- Frecuencimetro
- Frecuencimetro
- Bobina de choque(100μH)
- Resistor(100kΩ)
- Condensador cerámico(200pF)

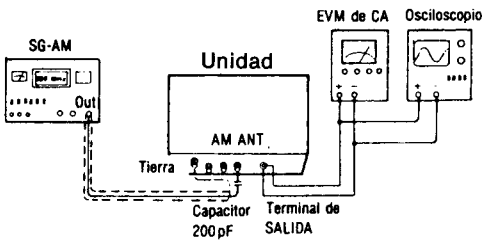
Nota: Para **T201** (AM-IFT), **L203** (bobina de OSC. AM (MW)), **L251** (bobina antena LO), **L303** (L.P.F.) y **L301, L302** (L.P.F.) son suministradas piezas ajustadas. Por lo tanto, no gire los núcleos de estas piezas.

AJUSTE DE AM(MW)-RF

1.La conexión del equipo de pruebas se muestra en la figura.
2.Poner la unidad en modalidad de **"AM"**.
3.Poner la presentación de la radio y el generador de señales en **612kHz**.
4.Ajustar **L202** para salida máxima.
5.Poner la presentación de la radio y el generador de señales en **1503kHz**.
6.Ajustar **CT201** para salida máxima.
7.Repita los pasos 3. al 6.

Nota:
El nivel de entrada de antena ha de ser lo más bajo posible estando libre de AGC (control automático de ganancia).

CONDICION DE GENERADOR DE SEÑALES DE AM
Modulación 30%
Frecuencia de modulación 400Hz

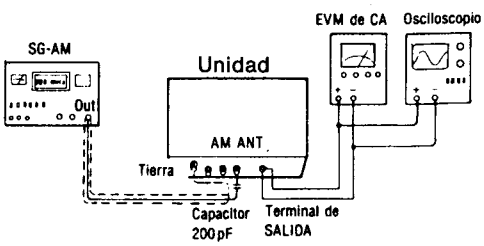


AJUSTE DE LO-RF (Sólo ST-G45AL)

1.La conexión del equipo de pruebas se muestra en la figura.
2.Poner la unidad en modalidad de **"LW"**.
3.Poner la puesta de la presentación de radiofrecuenciay generador de señales a **155kHz**.
4.Ajustar **L252** para salida máxima.
5.Poner la puesta de la presentación de radiofrecuenciay generador de señales a **353kHz**.
6.Ajustar **CT251** para salida máxima.
7.Repitir los pasos 3. al 6.

Nota:
El nivel de entrada de antena ha de ser lo más bajo posible estando libre de AGC (control automático de ganancia).

CONDICION DE GENERADOR DE SEÑALES DE AM
Modulación 30%
Frecuencia de modulación 400Hz



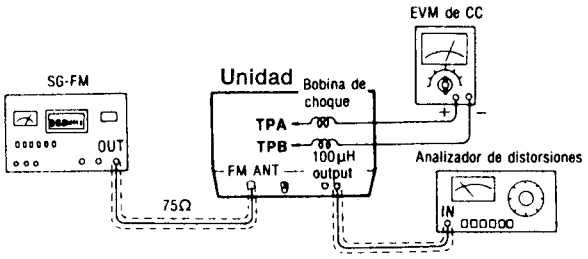
D

AJUSTE DE DISTORSION MONO FM

1.La conexión del equipo de pruebas se muestra en la figura.
2.Poner la unidad en modalidad de **"FM"**.
3.Poner la puesta de la presentación de radiofrecuencia y generador de señales a **100,10MHz.**
4.Ajustar el núcleo de **T101** de manera que el voltaje medido en modalidad de señal sea 0mV (0±10mV).
5.Ajustar **T102** de manera que el factor de distorsión de CH-I se minimice.
6.Repetir los pasos 4 y 5 algunas veces.
7.Asegurarse de que los factores de distorsión de CH-I y CH-D sean casi los mismos y los mínimos.

Nota:
El destornillador de ajuste usado debe estar hecho de resina.

CONDICION DE GENERADOR DE SEÑALES DE FM
Modulación 100%
Frecuencia de modulación 1kHz
Nivel de salida 66dB



TPA = TP102, TPB = TP101

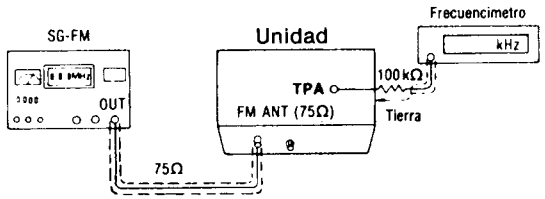
AJUSTE DE MPX VCO(OSCILADOR CONTROLADO POR VOLTAJE MPX)

1.La conexión del equipo de pruebas se muestra en la figura.
2.Poner la unidad en la posición de **"on/auto"**.
3.Poner la presentación de la radio y la puesta del generador de señales en **100.10MHz**.
4.Ajustar **VR302** para **19kHz±30Hz** en lectura de frecuencímetro.

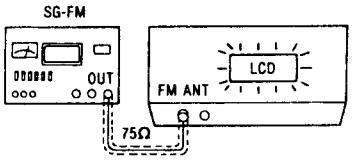
* USANDO SISTEMA ALTERNATIVO

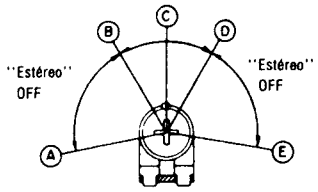
1.Aplicar señal estereofónica del generador o recibir la emisión estereofónica.
2.Ajustar **VR302** hasta que la presentacón de estéro se encienda. Fijar el brazo de **VR302** como se muestra en la figura.

CONDICION DE GENERADOR DE SEÑALES DE FM
Modulación.....0%
Frecuencia de modulación.....0
Nivel de salida.....66dB



TPA = TP301, Frecuencimetro:19.00 kHz





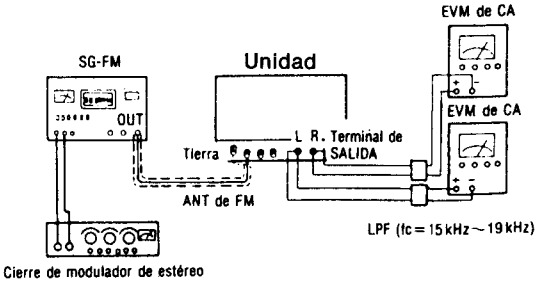
VR302

Ⓐ−Ⓑ,
Ⓓ−Ⓔ..... Pósición de "estéreo" OFF.
Ⓑ−Ⓓ..... Pósición de "estéreo" ON. (Indicador encendido)
Ⓒ..... Punto de ajuste de circuito piloto.

AJUSTE DE SEPARACION

1.La conexión del equipo pruebas se muestra en la figura.
2.Poner la unidad en modalidad de **"FM"**.
3.Poner la puesta de la presentación de radiofrecuencia y generador de señales a **100,10MHz**.
4.Ajustar **VR301** de manera que la salida de D quede minimizada cuando el modulador de estéreo esté en la modalidad "I". (modulación de CH-I.)

CONDICION DE GENERADOR DE SEÑALES DE FM
Modulación.....Modalidad de "I" o modalidad de "D" 45%, Piloto 10%
Frecuencia de modulación....1kHz, Piloto(19kHz)
Nivel de salida.....66dB



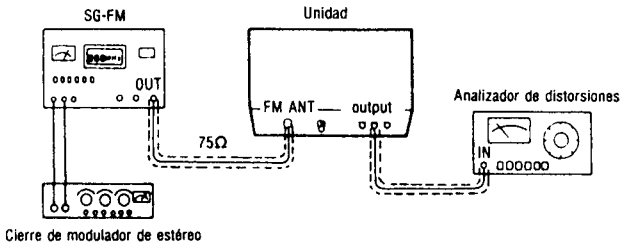
D

AJUSTE DE DISTORSION DE ESTEREO EN FM (Sólo [EG])

1.La conexión del equipo de pruebas se muestra en la figura.
2.Poner la unidad en modalidad de **"FM"**.
3.Poner la puesta de la presentación de radiofrecuencia y generador de señales a **100,10MHz.**
4.Ajustar **T1** de manera que el factor de distorsión de CH-I se minimice.
5.Asegurarse de que los factores de distorsión de CH-I y CH-D sean casi los mismos uno con el otro.

Nota:
El destornillador de ajuste usado debe estar hecho de resina.

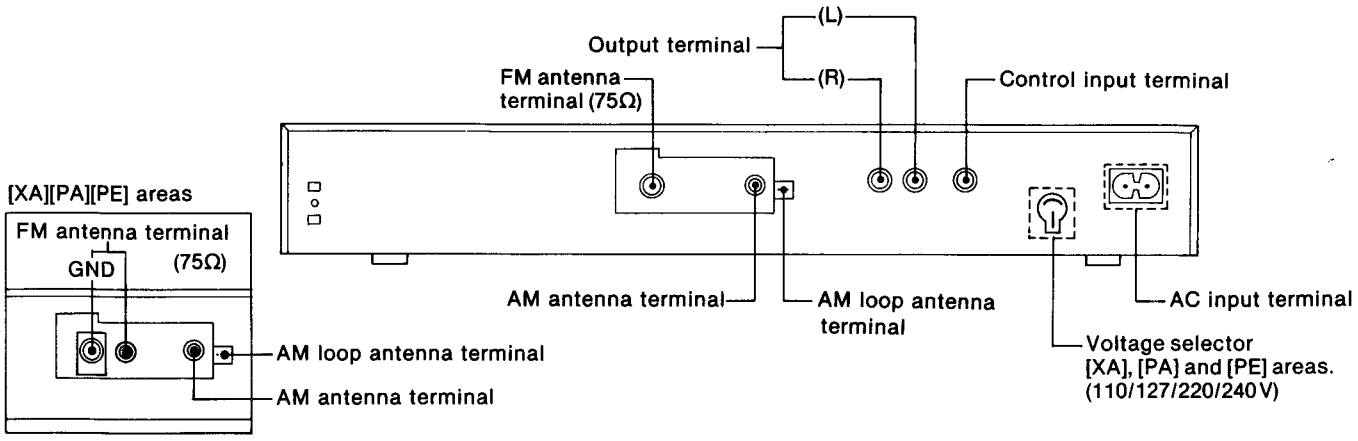
CONDICION DE GENERADOR DE SEÑALES DE FM
Modulación.....Modalidad de "I" o modalidad de "D" 45%, Piloto 10%
Frecuencia de modulación....1kHz, Piloto(19kHz)
Nivel de salida.....66dB



Printed in Japan
H870505000 YY/MT

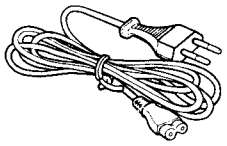
D

• Rear panel

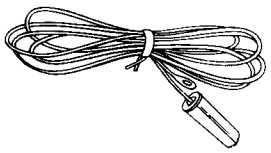


■ ACCESSORIES

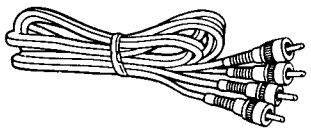
• AC power supply 1
(SFDAC05E03 [EX, EF, EB, EH, EG, Ei])
(SFDAC05G02 [EK])
(SJA163 [XL])
(SJA168-1 [XA, PA, PE])



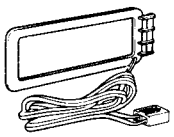
• FM indoor antenna 1
(SSA270M [EX, EK, EF, EB, EH, EG, Ei])
(SSA269M [XL, XA, PA, PE])



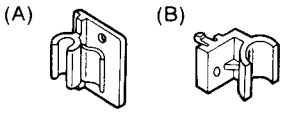
• Stereo connection cable 1
(SJP2249-1)



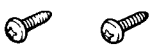
• AM loop antenna 1
(SPB1152T)



• AM antenna holders 2
(SMA231M) (SMA233-1M)



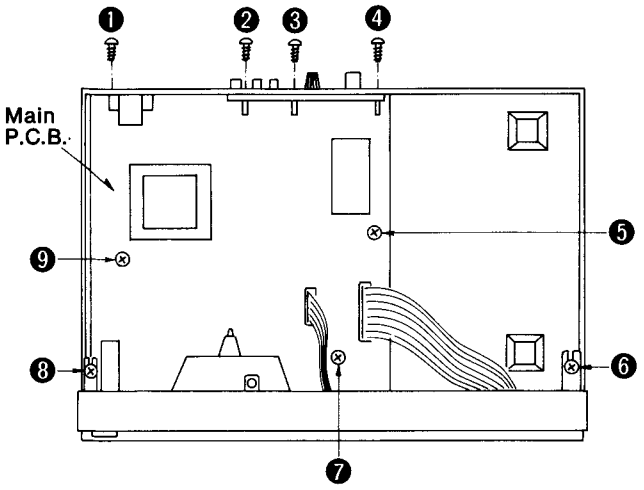
• Screws 2
(XTN3+10AFZ)

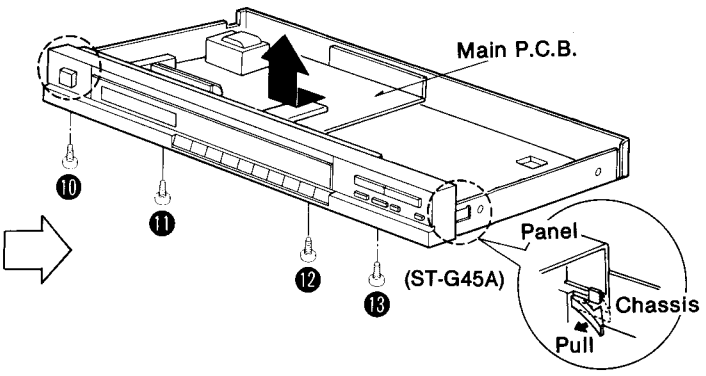


D

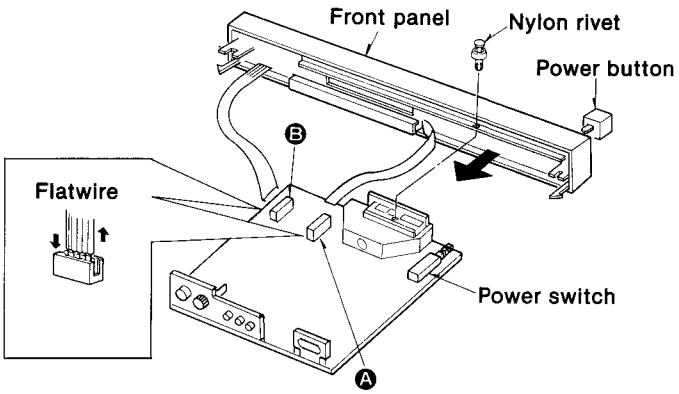
■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1	How to remove the cabinet	Ref. No. 2	How to remove the main P.C.B.
Procedure 1	• Remove the 4 screws.	Procedure 1 → 2	• Remove the 9 screws (❶~❾). • Remove the 4 screws (❿~⓭). • Slightly pull the front panel toward you and remove the main P.C.B.

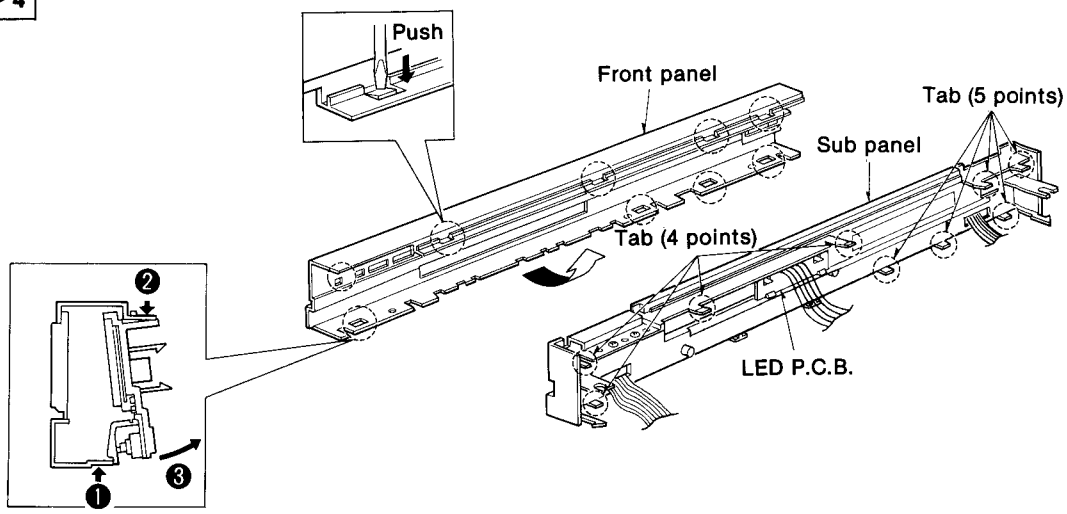




Ref. No. 3	How to remove the front panel
Procedure 1 → 2 → 3	• Remove the power button. • Remove the 1 Nylon rivet. • Remove the 2 flatwires (Ⓐ, Ⓑ).

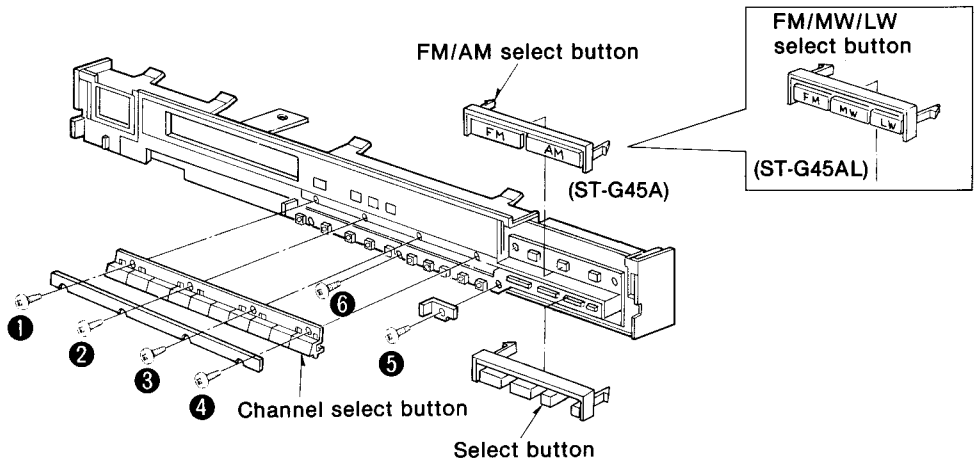


Ref. No. 4	How to remove the sub panel
Procedure 1 → 2 → 3 → 4	• Push out the 9 tabs on the bottom and top side of the sub panel by used minusdriver.



D

Ref. No. 5	How to remove the FM/AM (MW/LW) Channel switch
Procedure 1 → 2 → 3 → 4 → 5	• Remove the 6 screws (❶~❻).



■ MEASUREMENTS AND ADJUSTMENTS

■ AM/FM(ST-G45A) LW/MW/FM(ST-G45AL)

Control positions and equipment used

- AM and FM signal generator(AM and FM-SG)
- Stereo modulator
- Distortion analyser
- Oscilloscope
- Frequency counter
- Choke coil (100μH)
- Resistor(100kΩ)
- Ceramic capacitor(200pF)
- AC and DC electronic voltmeter(EVM)

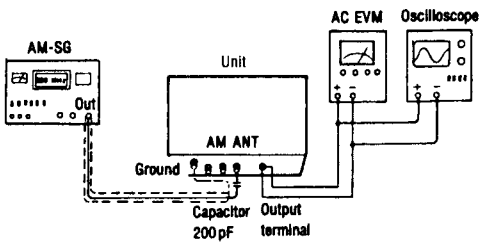
Note: For **T201** (AM (MW)-IFT), **L203** (AM (MW) OSC coil), **L251** (LW ANT coil), **L303** (L.P.F.) and **L301, L302** (L.P.F.), they are supplied as adjusted parts. So, do not turn the cores of the parts.

AM(MW)-RF ADJUSTMENT

1.Test equipment connection is shown in figure.
2.Set the unit to **"AM(MW)"** mode.
3.Set the radio and signal generator to **612kHz**.
4.Adjust **L202** for maximum output.
5.Set the radio dial and signal generator to **1503kHz**.
6.Adjust **CT201** for maximum output.
7.Repeat steps 3 ~ 6.

Note: Antenna input level must be as low as possible being free from AGC.

AM SIGNAL GENERATOR CONDITION
Modulation 30%
Modulation frequency 400Hz

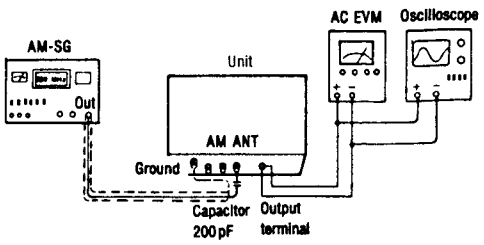


LW-RF ADJUSTMENT (ST-G45AL only)

1.Test equipment connection is shown in figure.
2.Set the unit to **"LW"** mode.
3.Set the radio frequency display and signal generator to **155kHz**.
4.Adjust **L252** for maximum output.
5.Set the radio frequency display and signal generator to **353kHz**.
6.Adjust **CT251** for maximum output.
7.Repeat steps 3 ~ 6.

Note: Antenna input level must be as low as possible being free from AGC.

AM SIGNAL GENERATOR CONDITION
Modulation 30%
Modulation frequency 400Hz



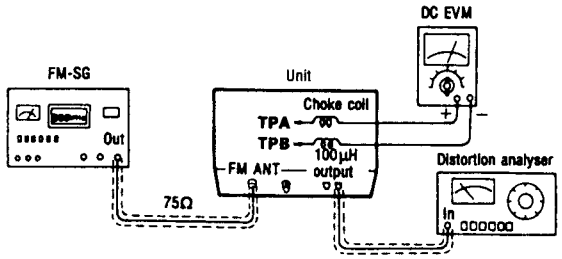
D

FM MONO DISTORTION ADJUSTMENT

1.Test equipment connection is shown in figure.
2.Set the unit to **"FM"** mode.
3.Set the radio frequency display and signal generator to **100.10MHz**.
4.Adjust the core of **T101** so that the voltage measured in signal mode is **0mV(0±10mV)** in 150mV range.
5.Adjust **T102** so that the distortion factor of L-CH is minimized.
6.Repeat steps 4 and 5.
7.Make sure that the distortion factors of L-CH and R-CH are nearly the same and minimum.

Note: The adjusting screwdriver used should be made of resin.

FM SIGNAL GENERATOR CONDITION
Modulation 100%
Modulation frequency 1kHz
Output level 66dB



TPA = TP102, TPB = TP101

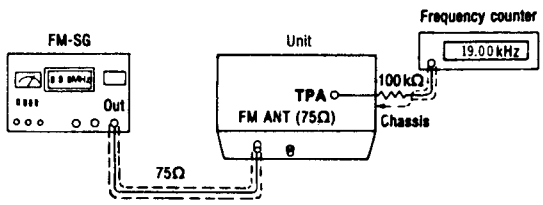
MPX VCO ADJUSTMENT

1.Test equipment connection is shown in figure.
2.Set the unit to **"on/auto"** position.
3.Set the radio dial and signal genarator to **100.10MHz**.
4.Adjust **VR302** for **19kHz±30Hz** on frequency counter reading.

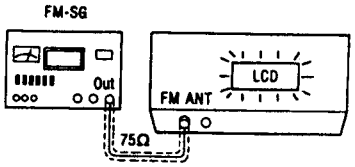
USING ALTERNATE SYSTEM

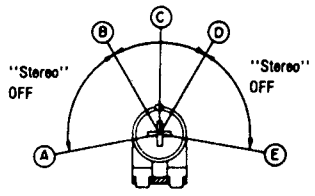
1.Apply stereo signal from generator or receive the stereo broadcast.
2.Adjust **VR302** until stereo indicator lights up. Fix the arm of **VR302** as shown in figure.

FM SIGNAL GENERATOR CONDITION
Modulation 0%
Modulation frequency 0
Output level 66dB



TPA = TP301, Frequency counter:19.00 kHz





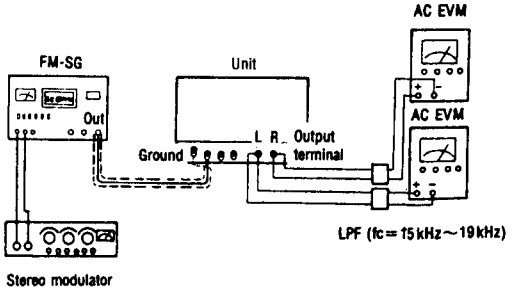
VR302

Ⓐ−Ⓑ,
Ⓓ−Ⓔ..... **"Stereo" OFF position**
Ⓑ−Ⓓ..... **"Stereo" ON position (Indicator lighting)**
Ⓒ..... **Adjust point of pilot circuit**

SEPARATION ADJUSTMENT

1.Test equipment connection is shown in figure.
2.Set the unit to **"FM"** mode.
3.Set the radio frequency display and signal generator to **100.10MHz**.
4.Adjust **VR301** so that the R-CH output is minimized when stereo modulator is in "L"(L-CH modulation) mode.

FM SIGNAL GENERATOR CONDITION
Modulation.....“L”mode or “R”mode 45%, Pilot 10%
Modulation frequency .....1kHz(Pilot 19kHz)
Output level 66dB

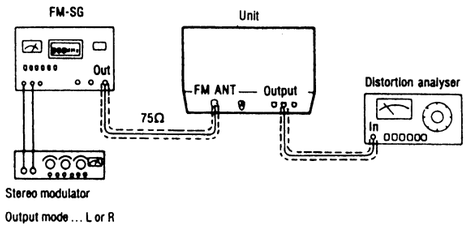


FM STEREO DISTORTION ADJUSTMENT ([EG] only)

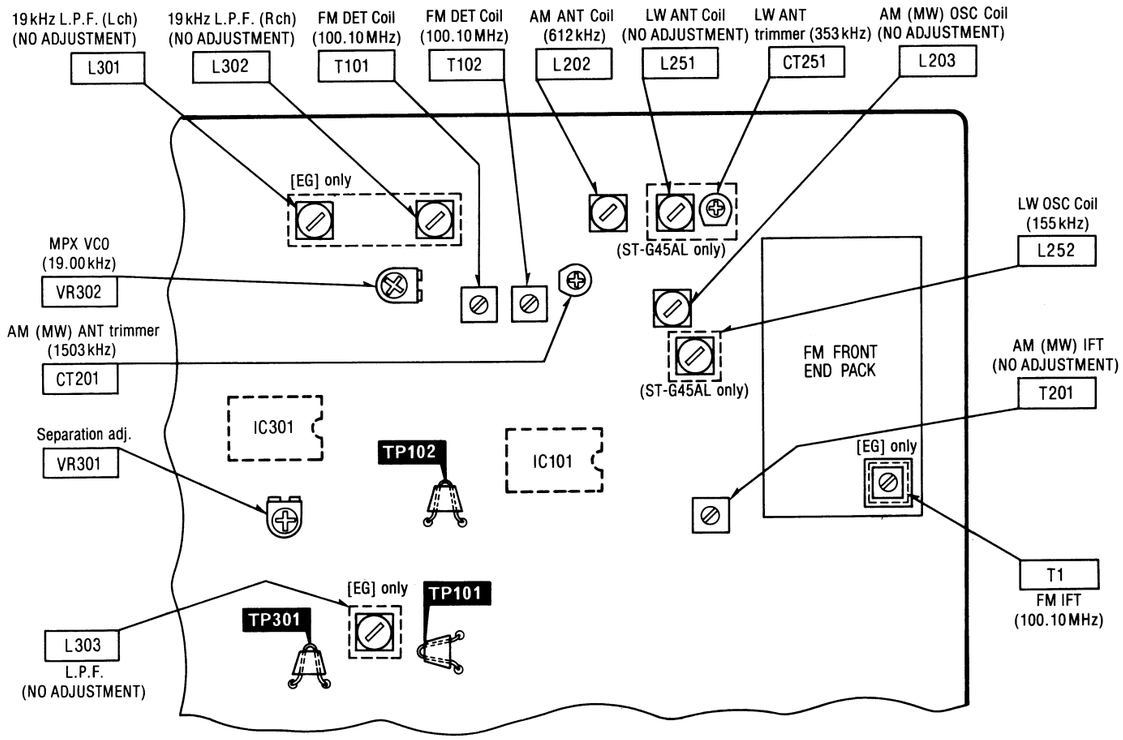
1.Test equipment connection is shown in figure.
2.Set the unit to **"FM"** mode.
3.Set the radio frequency display and signal generator to **100.10MHz**.
4.Adjust **T1** so that the distortion factor of L-CH is minimized.
5.Make sure that the distortion factors of L-CH and R-CH are nearly the same with each other to minimum.

Note: The adjusting screwdriver used should be made of resin.

FM SIGNAL GENERATOR CONDITION
Modulation .....”L”mode or ”R”mode 45%, Pilot 10%
Modulation frequency .....1kHz(Pilot 19kHz)
Output level.....66dB



• Adjustment Points



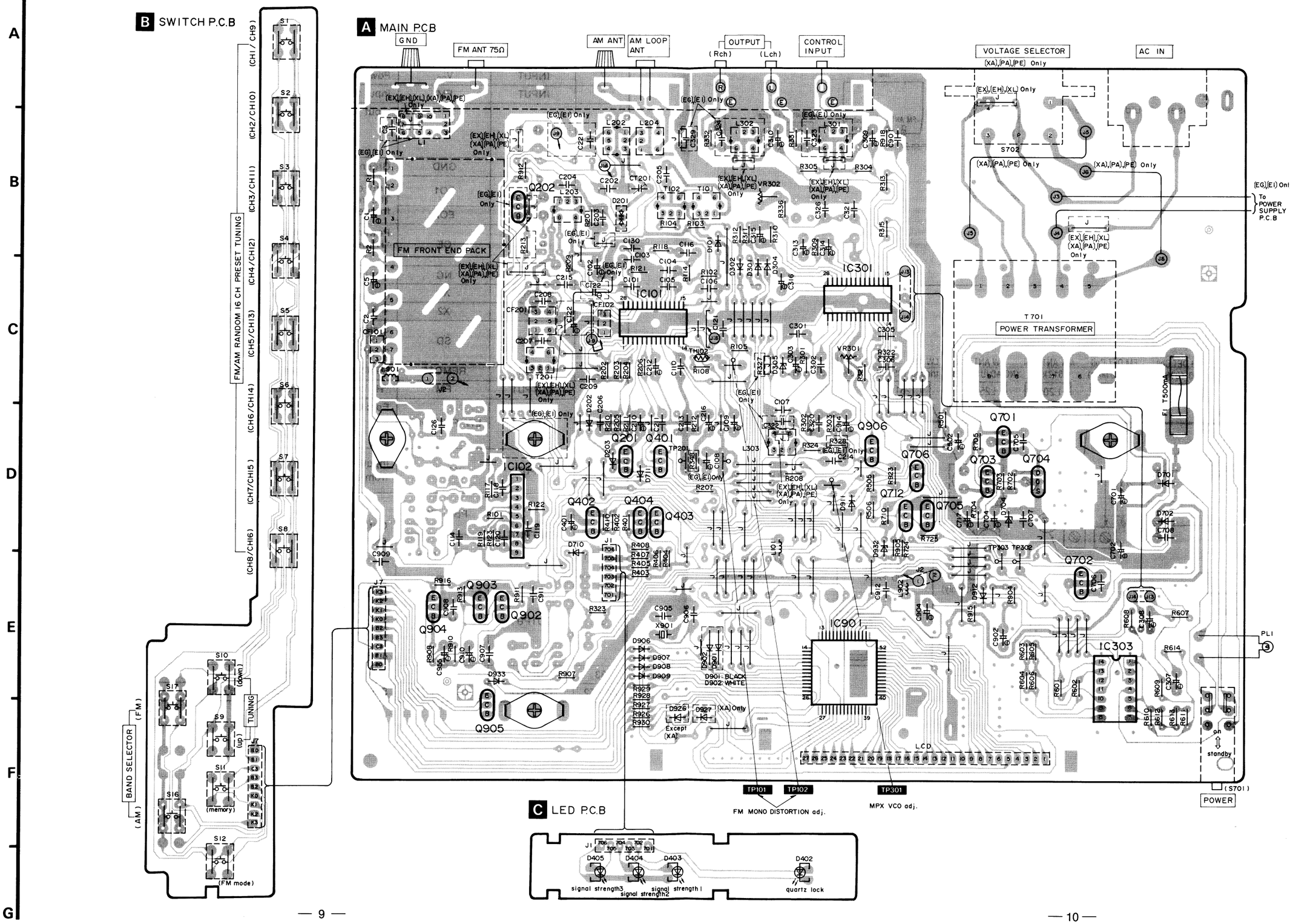
■ FUNCTION OF TERMINAL (IC901: UPD1718G514)

PIN NO.	IN/OUT	MARK	DESCRIPTION OF TERMINAL
1~4	OUTPUT	LCD4~LCD1	Segment signal output for LCD display.
5	OUTPUT	COM2	Common of LCD. 5V, 2.5V, 0, 5msec.
6		COM1	
7	INPUT	V_{DD}	Power supply terminal.
8	INPUT	FM	Input for FM OSC output frequency divided to 1/32 or 1/33 by pre-scaler.
9	INPUT	AM	Input for AM OSC output. 1.84V, 1.87V, 522kHz, 1629kHz
10	——	GND	Ground terminal.
11	OUTPUT (ST-G40L only)	EO1	Error output of PLL. The frequency is output as a result of comparison between crystal frequency and FM or AM (MW/LW) station frequency.
12	OUTPUT	EO2	
13	INPUT	CE	Power supply detection. "H" input with it connected to home-use power outlet socket. H → 4V, L → 0V
14	——	NC	Not used in this unit.
15	OUTPUT	X1	Connecting terminal for crystal oscillator. The crystal connected is at 4.5MHz.
16	INPUT	X2	
17	INPUT	SD	Station detection. 1. Signal received → H 2. NO signal → L
18	INPUT	REMOTE	Remote control input terminal.
19	OUTPUT	FM	"H" output in FM mode.
20	OUTPUT	LW. FM MONO	Forcible monaural selection. 4.8V, 0V. Forcible monaural mode
21~24	INPUT	K3~K0	Input terminal for key return signal from external key matrix.
25~28	OUTPUT	PB3~PB0	Output terminal for key source signal data.
29~31		PC3~PC1	
32	OUTPUT	MUTE	This is the output terminal to eliminate shock noise due to unlocking at PLL. <Muting output> 1. Pin 13 (CE) is L → H or H → L. 2. Power switch "off". 3. Frequency change. (up/down, FM ↔ AM) 4. FM IF selection. 5.0V, 0V. Muting output operation
33	INPUT	V_{DD}	Power supply terminal.
34~52	OUTPUT	LCD23~LCD5	Segment signal output for LCD display.

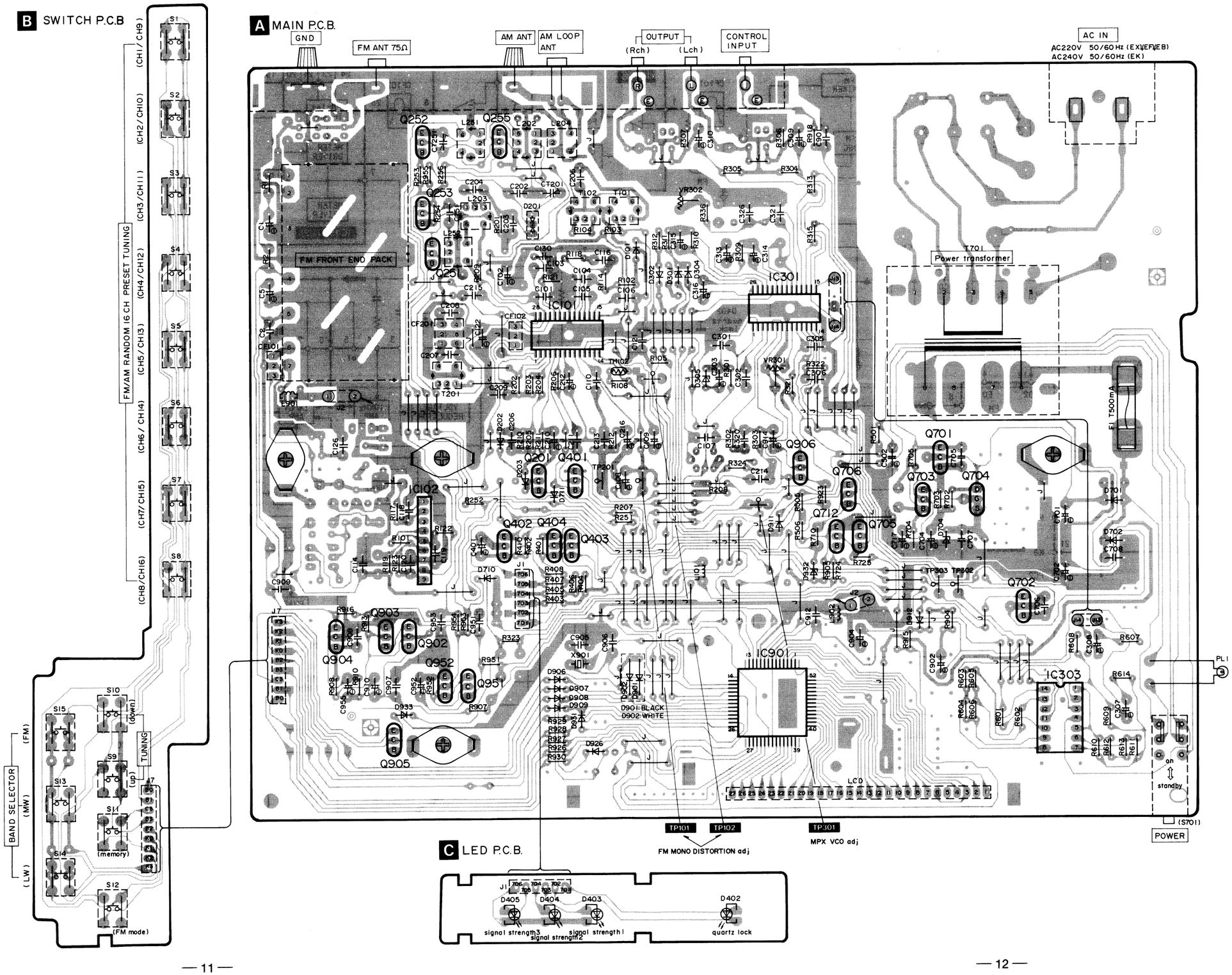
[KEY MATRIX]

Pin No.	25	26	27	28	29
21	up	MW (AM)	CH5 /13	CH1 /9	—
22	down	LW	CH6 /14	CH2 /10	—
23	—	FM	CH7 /15	CH3 /11	memo
24	—	mode	CH8 /16	CH4 /12	—

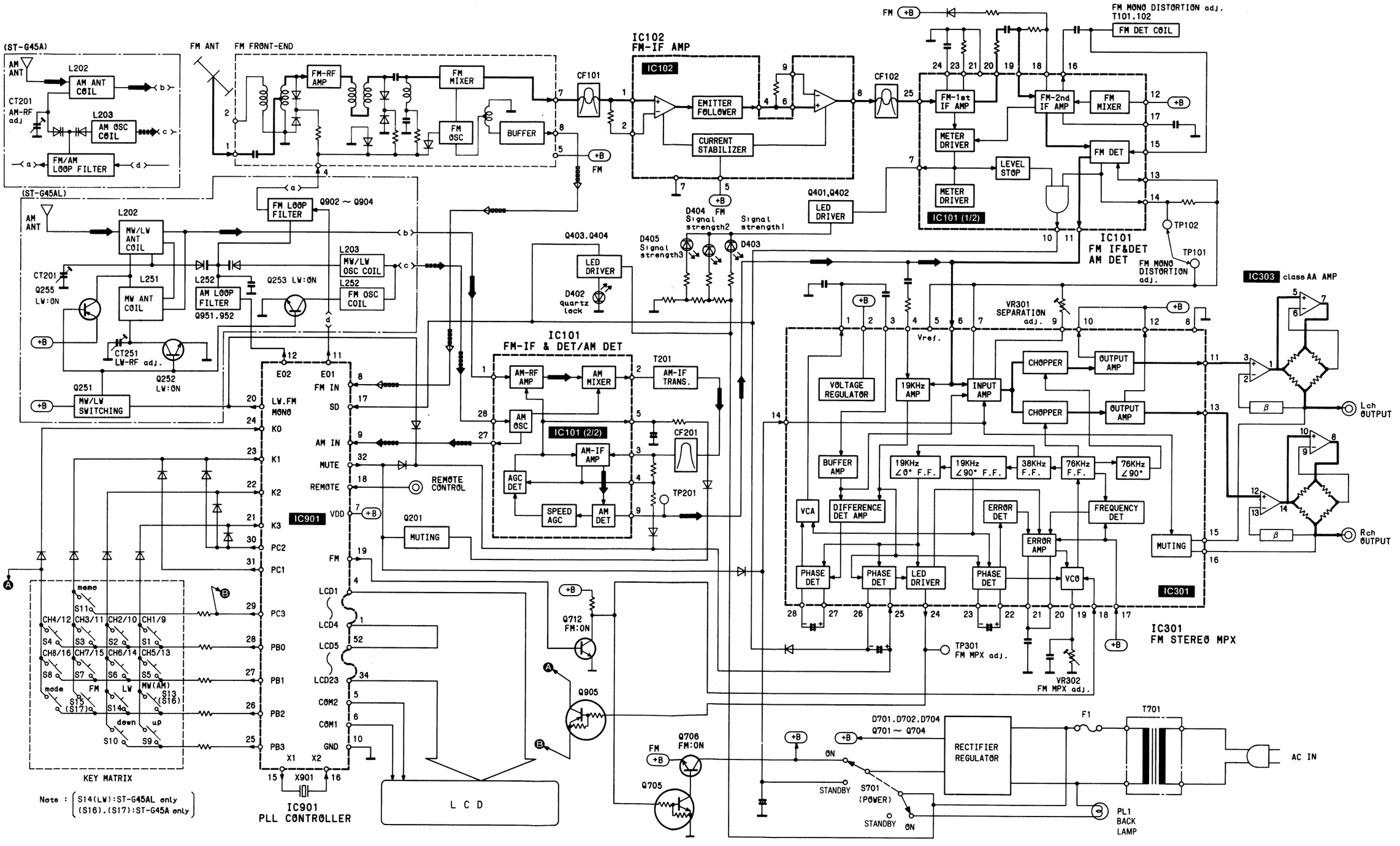
■ CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM (ST-G45A)



■ CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM (ST-G45AL)



■ BLOCK DIAGRAM



■ RESISTORS & CAPACITORS

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area.
Parts without these indications can be used for all areas.

Numbering System of Resistor

Example

ERD	25	F	J	102
Type	Wattage	Shape	Tolerance	Value

ERX	2	AN	J	471
Type	Wattage	Shape	Tolerance	Value 47x10¹ (ohm)

Numbering System of Capacitor

Example

ECKD	1H	102	Z	F
Type	Voltage	Value	Tolerance	Peculiarity

ECEA	50	M	330
Type	Voltage	Peculiarity	Value (33x10° microfarad)

Resistor Type		Wattage	Tolerance
ERD	: Carbon	10 : 1/8W	J : ±5%
ERG	: Metal Oxide	12 : 1/2W	F : ±1%
ERX	: Metal Film	25 : 1/4W	G : ±2%
ERQ	: Fuse Type Metal	1A : 1W	K : ±10%
ERD□ L	: Carbon (chip)	18 : 1/8W	
ERO□ K	: Metal Film (chip)	S2 : 1/4W	
ERC	: Solid	S1 : 1/2W	
		2F : 1/4W	
		50 : 1/2W	
		2A : 2W	

Capacitor Type		Voltage	Tolerance
ECE	: Electrolytic	0J : 6.3V	C : ±0.25pF
ECCD	: Ceramic	1A : 10V	J : ±5%
ECKD	: Ceramic	1C : 16V	K : ±10%
ECQM	: Polyester	1E : 25V	Z : +80% −20%
		1H : 50V	
ECQP	: Polyproylene	1V : 35V	P : +100% −0%
		50 : 50V	
ECG	: Ceramic	05 : 50V	M : ±20%
ECEA□□□N	: Non Polar Electrolytic	2H : 500V	
		2A : 100V	D : ±0.5pF
QCU□	: Ceramic (Chip Type)	1 : 100V	G : ±2%
ECUX	: Ceramic (Chip Type)	KC : 400V AC	
ECF	: Semiconductor	KC : 125VAC (UL)	
		1J : 63V	
EECW	: Liquid electrolyte double layer capcitor		

Ref. No.	Part No.	Part Code
RESISTORS		
R1	ERDS2TJ104	001 152 2348 2
R2	ERDS2TJ273	001 152 2436 3
R101	ERDS2TJ272	001 152 2354 4
R102	ERDS2TJ104	001 152 2348 2
R103	ERDS2TJ822	001 152 2455 0
R104	ERDS2TJ182	001 152 2352 6
R105	ERDS2TJ564	001 152 2447 0
R108	ERDS2TJ333	001 152 2358 0
R114	ERDS2TJ101	001 152 2421 0
R117	ERDS2TJ471	001 152 2361 5
R118	ERDS2TJ271	001 152 2435 4
R119	ERDS2TJ122	001 152 2423 8
R121	ERDS2TJ392	001 152 2439 0
R122, R123	ERDS2TJ331	001 152 2356 2
R201	ERDS2TJ104	001 152 2348 2
R202	ERDS2TJ222	001 152 2353 5
R203	ERDS2TJ473	001 152 2363 3
R204	ERDS2TJ563	001 152 2446 1
R205	ERDS2TJ124	001 152 2425 6
R206	ERDS2TJ101	001 152 2421 0
R207	ERDS2TJ104	001 152 2348 2
R208	ERDS2TJ333	001 152 2358 0
R209	ERDS2TJ102	001 152 2346 4
R210	ERDS2TJ274	001 152 2437 2
R211	ERDS2TJ222	001 152 2353 5
R212, R251	ERDS2TJ473	001 152 2363 3
R252, R253	ERDS2TJ182	001 152 2352 6
R254	ERDS2TJ223	001 152 2432 7
R256	ERDS2TJ103	001 152 2347 3
R301	ERDS2TJ102	001 152 2346 4
R302	ERDS2TJ563	001 152 2446 1
R303	ERDS2TJ473	001 152 2363 3
R304, R305	ERDS2TJ564	001 152 2447 0
R306, R307	ERDS2TJ104	001 152 2348 2
R309	ERDS2TJ102	001 152 2346 4
R310, R311	ERDS2TJ274	001 152 2437 2
R312	ERDS2TJ274	001 152 2437 2
R313	ERDS2TJ103	001 152 2347 3
R315	ERDS2TJ393	001 152 2440 7
R321, R322	ERDS2TJ274	001 152 2437 2
R323	ERDS2TJ473	001 152 2363 3
R324	ERDS2TJ564	001 152 2447 0
R336	ERDS2TJ123	001 152 2424 7
R401	ERDS2TJ271	001 152 2435 4
R402	ERDS2TJ222	001 152 2353 5
R403	ERDS2TJ331	001 152 2356 2
R404	ERDS2TJ121	001 152 2349 1
R405	ERDS2TJ151	001 152 2426 5
R406	ERDS2TJ470	001 152 2442 5
R407	ERDS2TJ331	001 152 2356 2
R408	ERDS2TJ152	001 152 2350 8
R410	ERDS2TJ472	001 152 2362 4
R501	ERDS2TJ103	001 152 2347 3
R505, R506	ERDS2TJ155	001 152 2766 8
R601	ERDS2TJ332	001 152 2357 1
R602	ERDS2TJ561	001 152 2364 2
R603	ERDS2TJ331	001 152 2356 2
R604	ERDS2TJ332	001 152 2357 1
R605	ERDS2TJ101	001 152 2421 0
R606	ERDS2TJ102	001 152 2346 4
R607, R608	ERDS2TJ332	001 152 2357 1
R609	ERDS2TJ561	001 152 2364 2
R610	ERDS2TJ101	001 152 2421 0
R610	ERDS2TJ561	001 152 2364 2
R611	ERDS2TJ102	001 152 2346 4
R612	ERDS2TJ331	001 152 2356 2
R613, R614	ERDS2TJ332	001 152 2357 1
R702	ERDS2TJ152	001 152 2350 8
R703	ERDS2TJ222	001 152 2353 5
R704, R705	ERDS2TJ822	001 152 2455 0
R710	ERDS1FJ102	001 152 2614 3
R724	ERDS2TJ473	001 152 2363 3
R725	ERDS2TJ182	001 152 2352 6
R904	ERDS2TJ681	001 152 2449 8
R905	ERDS2TJ103	001 152 2347 3
R907	ERDS2TJ102	001 152 2346 4
R908	ERDS2TJ123	001 152 2424 7
R913	ERDS2TJ273	001 152 2436 3
R915	ERDS2TJ103	001 152 2347 3
R916	ERDS2TJ682	001 152 2365 1
R918	ERDS2TJ102	001 152 2346 4
R923	ERDS1FJ473	
R926, R927	ERDS2TJ472	001 152 2362 4
R928, R929	ERDS2TJ472	001 152 2362 4
R930	ERDS2TJ472	001 152 2362 4
R951	ERDS2TJ102	001 152 2346 4
R952	ERDS2TJ332	001 152 2357 1
R953	ERDS2TJ123	001 152 2424 7
R954	ERDS2TJ102	001 152 2346 4
R955	ERDS2TJ822	001 152 2455 0
CAPACITORS		
C1	ECEA1EU3R3	001 120 2839 6
C2	ECKD1H103PF	001 103 1449 7
C5	ECEA1CU470	001 120 2835 0
C101	ECQM1H223JZ	001 106 0739 9
C102	ECEA1AU101	001 120 2830 5
C103	ECQM1H102JZ	001 106 0661 4
C104, C105	ECKD1H103PF	001 103 1449 7
C106	ECCD1H070CC	001 103 0271 9
C107	RCBS1H101KBY	001 103 5569 4
C108	ECEA1AU101	001 120 2830 5
C109	ECEA1HUR22	001 120 3247 0
C110	ECFTD104KXL	001 108 0793 3
C114	ECKD1H103PF	001 103 1449 7
C116	ECQM1H102JZ	001 106 0661 4
C118, C119	ECKD1H103PF	001 103 1449 7
C120	ECKD1H103PF	001 103 1449 7
C121	ECFTD223KXL	001 108 0342 6
C122	ECEA0JU471	001 120 2924 0
C126	ECKD1H103PF	001 103 1449 7
C130	RCBS1H180JCY	001 103 5591 6
C202 ⚠	ECKD1H223PF	001 103 1510 9
C203	ECCD1H150KC	001 103 0410 6
C204	ECQP1471JZ	001 106 1107 1
C205, C206	ECKD1H103PF	001 103 1449 7
C207	RCBS1H8R2KCY	001 103 5644 0
C208	ECCD1H680K	001 103 0682 4
C209	ECKD1H103PF	001 103 1449 7
C210	ECEA0JU330	001 120 3162 4
C211	ECKD1H103PF	001 103 1449 7
C212	ECEA1HUR47	001 120 3249 8
C213 ⚠	ECKD1H223PF	001 103 1510 9
C214	ECFTD183KXL	001 108 0358 8
C215	ECKD1H103PF	001 103 1449 7
C216	ECEA0JU330	001 120 3162 4
C251	ECQP1391JZ	001 106 1101 7

Ref. No.	Part No.	Part Code
C301	ECKD1H103PF	001 103 1449 7
C302	ECQM1H102JZ	001 106 0661 4
C303	ECEA1AU101	001 120 2830 5
C305, C306	ECQM1H153JZ	001 106 0704 0
C307, C308	ECEA1EU3R3	001 120 2839 6
C309, C310	ECEA1CU100	001 120 2905 3
C313	ECEA1HUR47	001 120 3249 8
C314, C315	ECEA1HUR22	001 120 3247 0
C316	ECEA1CU100	001 120 2905 3
C320, C321	ECFTD223KXL	001 108 0342 6
C326	ECQP1391JZ	001 106 1101 7
C401	ECEA1CU100	001 120 2905 3
C502	ECEA1HUR22	001 120 3247 0
C701	ECEA16V1000	001 120 2845 7
C702	ECEA1CU222	001 120 3074 3
C704	ECEA1EU101	001 120 2837 8
C705, C706	ECKD1H103PF	001 103 1449 7
C707, C708	ECKD1H103PF	001 103 1449 7
C717	ECEA1CU100	001 120 2905 3
C901	ECKD1H103PF	001 103 1449 7
C902	ECEA0JU222	001 120 3161 5
C904	ECEA0JU471	001 120 2924 0
C905	ECCD1H330KC	001 103 0569 4
C906	ECCD1H060CC	001 103 0264 8
C907	ECKD1H103PF	001 103 1449 7
C908	ECQM1H223JZ	001 106 0739 9
C909	ECKD1H103PF	001 103 1449 7
C910	ECEA25M4R7R	001 120 0838 5
C912	ECKD1H103PF	001 103 1449 7
C914	ECEA1HU010	001 120 2842 1
C951 ⚠	ECKD1H223PF	001 103 1510 9
C952	ECEA1HU010	001 120 2842 1
C953	ECQM1H223JZ	001 106 0739 9
C955	ECEA1HUR47	001 120 3249 8

■ REPLACEMENT PARTS LIST

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- Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Code	Description
INTEGRATED CIRCUITS			
IC101	AN7274NS	001 060 8244 6	I.C., FM I F/AM
IC102	AN278	001 060 0102 1	I.C., FM I F
IC301	AN7472S	001 060 8249 1	I.C., FM MPX
IC303	AN6554F	001 060 2992 1	I.C., AMP
IC901	UPD1718G514	001 061 1045 4	I.C., PLL
TRANSISTORS			
Q201, Q251	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q252, Q253	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q255	2SA1175FE	001 030 5075 5	TRANSISTOR
Q401, Q402	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q403, Q404	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q701, Q702	2SD592ANCQ	001 030 1752 7	TRANSISTOR
Q703	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q704	2SK301	001 030 2428 2	TRANSISTOR
Q705	UN4214	001 030 4835 3	TRANSISTOR
Q706, Q712	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q902, Q903	2SC1310-G	001 030 6080 4	TRANSISTOR
Q904	2SA1175FE	001 030 5075 5	TRANSISTOR
Q905	UN4113	001 030 2900 9	TRANSISTOR
Q906, Q951	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q952	2SC3311A-Q	001 030 5279 5	TRANSISTOR
DIODES			
D101	MA165	001 032 0494 0	DIODE
D201	KV1260Z	001 032 7237 7	DIODE
D202, D203	MA165	001 032 0494 0	DIODE
D301, D302	MA165	001 032 0494 0	DIODE
D304	MA165	001 032 0494 0	DIODE
D305	MA4082M	001 032 4955 6	DIODE
D402	LN846RP	001 032 3839 3	L.E.D
D403, D404	LN446YP	001 032 3834 8	L.E.D
D405	LN846RP	001 032 3839 3	L.E.D
D701, D702 ⚠	SVD1SR35200A	001 032 3951 4	RECTIFIER
D704	MA4062-M	001 032 7211 7	DIODE
D710, D711	MA165	001 032 0494 0	DIODE
D901, D902	MA162A	001 032 0493 1	DIODE
D906, D907	MA165	001 032 0494 0	DIODE
D908, D909	MA165	001 032 0494 0	DIODE
D911, D912	MA165	001 032 0494 0	DIODE
D926, D931	MA165	001 032 0494 0	DIODE
D932	MA4091-M	001 032 7213 5	DIODE
D933	MA165	001 032 0494 0	DIODE
VARIABLE RESISTORS			
VR301	QVNB3A00B104	001 180 1594 6	VARIABLE RESISTOR
VR302	QVNB3A00B103	001 180 1684 5	VARIABLE RESISTOR
VARIABLE CAPACITORS			
CT201	SVCTZ03T110F	001 142 0370 8	VARIABLE CAPACITOR
CT251	SVCTZ03R200F	001 142 0369 1	TRIMMER

Ref. No.	Part No.	Part Code	Description
THERMISTORS AND VARISTORS			
TH102	ERTD2ZHL332S	001 191 0186 1	THERMISTOR
COILS AND TRANSFORMERS			
L101	ELEPK101KA	001 211 0855 8	CHOKE COIL
L202	SLA2B3-P	001 211 2249 6	ANTENNA COIL
L203	SL02B9R-P	001 211 2783 9	OSCILLATOR COIL
L204	SLQB20G-1P	001 211 2711 5	CHOCK COIL
L251	SLA1B7R-P	001 211 2779 5	ANTENNA COIL
L252	SL01B5-P	001 211 2782 0	OSCILLATOR COIL
L901, L902	RLQY25S5-0	001 210 1383 0	CHOKE COIL
T101	SLI4B520-Z	001 211 0628 7	I.F. TRANSFORMER
T102	SLI4B521-Z	001 211 0629 6	I.F. TRANSFORMER
T201	SLI2B104-M	001 215 2837 2	I.F. TRANSFORMER
T701 ⚠ (EX, EF, EB)	SLT5K171	001 202 8001 5	POWER TRANSFORMER
T701 ⚠ (EK)	SLT5K175	001 202 8002 4	POWER TRANSFORMER
FILTERS			
CF101	SVFE107MZ2-Q	001 241	CERAMIC FILTER
CF102	SVFE107MX2-Q	001 241 1128 0	CERAMIC FILTER
CF201	SVFSFZ450F7L	001 241 0429 4	CERAMIC FILTER
OSCILLATORS			
X901	SVQ43U452-D	001 250 1506 3	CRYSTAL OSC
DISPLAYS			
LCD	SALHLC9225-4	001 080 0277 7	LIQUID CRYSTAL DISPLAY
FRONT PACKS			
FE	SNVFE306E15	001 141 0539 6	FRONT END PACK
LAMPS			
PL1	XAMS15S150	002 351 0974 3	LAMP
FUSES			
F1 ⚠ (EK)	XBA2C05TB0	002 380 1350 2	FUSE, T0.5A 250V
F1 ⚠ (EX, EF, EB)	XBA2C05TR0	002 380 0395 3	FUSE, T0.5A 250V
SWITCHES			
S1, S2	SSG13	003 435 2951 9	SW, CH1·CH2
S3, S4	SSG13	003 435 2951 9	SW, CH3·CH4
S5, S6	SSG13	003 435 2951 9	SW, CH5·CH6
S7, S8	SSG13	003 435 2951 9	SW, CH7·CH8
S9, S10	SSG13	003 435 2951 9	SW, UP·DOWN
S11, S12	SSG13	003 435 2951 9	SW, MEMO·MODE
S13, S14	SSG13	003 435 2951 9	SW, MW·LW
S15	SSG13	003 435 2951 9	SW, FM
S701 ⚠	SSH1214	003 435 5649 0	SW., POWER.

Ref. No.
CABINET AND CHA
1 Ⓚ
1 Ⓢ
1-1 Ⓢ
1-1 Ⓚ
2
3 Ⓢ
3 Ⓚ
4 Ⓚ
4 Ⓢ
5 Ⓢ
5 Ⓚ
6 Ⓚ
6 Ⓢ
7 Ⓚ
7 Ⓢ
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9 Ⓢ
9 Ⓚ
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■ TE

ge	Tolerance
W	J : ±5%
W	F : ±1%
W	G : ±2%
	K : ±10%
W	
W	
W	
W	
W	

	Tolerance
	C : ±0.25pF
	J : ±5%
	K : ±10%
	Z : +80% −20%
	P : +100% −0%
	M : ±20%
	D : ±0.5pF
	G : ±2%

No.	Part Code
J472	001 152 2362 4
J102	001 152 2346 4
J332	001 152 2357 1
J123	001 152 2424 7
J102	001 152 2346 4
J822	001 152 2455 0
J3R3	001 120 2839 6
103PF	001 103 1449 7
J470	001 120 2835 0
223JZ	001 106 0739 9
J101	001 120 2830 5
102JZ	001 106 0661 4
103PF	001 103 1449 7
070CC	001 103 0271 9
01KBY	001 103 5569 4
J101	001 120 2830 5
JR22	001 120 3247 0
4KXL	001 108 0793 3
03PF	001 103 1449 7
102JZ	001 106 0661 4
03PF	001 103 1449 7
03PF	001 103 1449 7
3KXL	001 108 0342 6
J471	001 120 2924 0
03PF	001 103 1449 7
80JCY	001 103 5591 6
23PF	001 103 1510 9
50KC	001 103 0410 6
1JZ	001 106 1107 1
03PF	001 103 1449 7
R2KCY	001 103 5644 0
80K	001 103 0682 4
03PF	001 103 1449 7
330	001 120 3162 4
03PF	001 103 1449 7
JR47	001 120 3249 8
23PF	001 103 1510 9
3KXL	001 108 0358 8
03PF	001 103 1449 7
330	001 120 3162 4
1JZ	001 106 1101 7

Ref. No.	Part No.	Part Code
C301	ECKD1H103PF	001 103 1449 7
C302	ECQM1H102JZ	001 106 0661 4
C303	ECEA1AU101	001 120 2830 5
C305, C306	ECQM1H153JZ	001 106 0704 0
C307, C308	ECEA1EU3R3	001 120 2839 6
C309, C310	ECEA1CU100	001 120 2905 3
C313	ECEA1HUR47	001 120 3249 8
C314, C315	ECEA1HUR22	001 120 3247 0
C316	ECEA1CU100	001 120 2905 3
C320, C321	ECFTD223KXL	001 108 0342 6
C326	ECQP1391JZ	001 106 1101 7
C401	ECEA1CU100	001 120 2905 3
C502	ECEA1HUR22	001 120 3247 0
C701	ECEA16V1000	001 120 2945 7
C702	ECEA1CU222	001 120 3074 3
C704	ECEA1EU101	001 120 2837 8
C705, C706	ECKD1H103PF	001 103 1449 7
C707, C708	ECKD1H103PF	001 103 1449 7
C717	ECEA1CU100	001 120 2905 3
C901	ECKD1H103PF	001 103 1449 7
C902	ECEA0JU222	001 120 3161 5
C904	ECEA0JU471	001 120 2924 0
C905	ECCD1H330KC	001 103 0569 4
C906	ECCD1H060CC	001 103 0264 8
C907	ECKD1H103PF	001 103 1449 7
C908	ECQM1H223JZ	001 106 0739 9
C909	ECKD1H103PF	001 103 1449 7
C910	ECEA25M4R7R	001 120 0838 5
C912	ECKD1H103PF	001 103 1449 7
C914	ECEA1HU010	001 120 2842 1
C951 ⚠	ECKD1H223PF	001 103 1510 9
C952	ECEA1HU010	001 120 2842 1
C953	ECQM1H223JZ	001 106 0739 9
C955	ECEA1HUR47	001 120 3249 8

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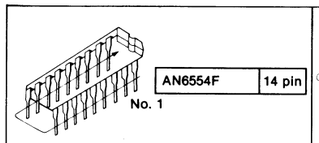
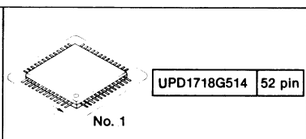
IC101	AN7274NS	001 060 8244 6	I.C., FM IF/AM
IC102	AN278	001 060 0102 1	I.C., FM IF
IC301	AN7472S	001 060 8249 1	I.C., FM MPX
IC303	AN6554F	001 060 2992 1	I.C., AMP
IC901	UPD1718G514	001 061 1045 4	I.C., PLL
TRANSISTORS			
Q201, Q251	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q252, Q253	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q255	2SA1175FE	001 030 5075 5	TRANSISTOR
Q401, Q402	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q403, Q404	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q701, Q702	2SD592ANCQ	001 030 1752 7	TRANSISTOR
Q703	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q704	2SK301	001 030 2428 2	TRANSISTOR
Q705	UN4214	001 030 4835 3	TRANSISTOR
Q706, Q712	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q902, Q903	2SC1310-G	001 030 6080 4	TRANSISTOR
Q904	2SA1175FE	001 030 5075 5	TRANSISTOR
Q905	UN4113	001 030 2900 9	TRANSISTOR
Q906, Q951	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q952	2SC3311A-Q	001 030 5279 5	TRANSISTOR
DIODES			
D101	MA165	001 032 0494 0	DIODE
D201	KV1260Z	001 032 7237 7	DIODE
D202, D203	MA165	001 032 0494 0	DIODE
D301, D302	MA165	001 032 0494 0	DIODE
D304	MA165	001 032 0494 0	DIODE
D305	MA4082M	001 032 4955 6	DIODE
D402	LN846RP	001 032 3839 3	L.E.D
D403, D404	LN446YP	001 032 3834 8	L.E.D
D405	LN846RP	001 032 3839 3	L.E.D
D701, D702 ⚠	SVD1SR35200A	001 032 3951 4	RECTIFIER
D704	MA4062-M	001 032 7211 7	DIODE
D710, D711	MA165	001 032 0494 0	DIODE
D901, D902	MA162A	001 032 0493 1	DIODE
D906, D907	MA165	001 032 0494 0	DIODE
D908, D909	MA165	001 032 0494 0	DIODE
D911, D912	MA165	001 032 0494 0	DIODE
D926, D931	MA165	001 032 0494 0	DIODE
D932	MA4091-M	001 032 7213 5	DIODE
D933	MA165	001 032 0494 0	DIODE
VARIABLE RESISTORS			
VR301	QVNB3A00B104	001 180 1594 6	VARIABLE RESISTOR
VR302	QVNB3A00B103	001 180 1684 5	VARIABLE RESISTOR
VARIABLE CAPACITORS			
CT201	SVCTZ03T110F	001 142 0370 8	VARIABLE CAPACITOR
CT251	SVCTZ03R200F	001 142 0369 1	TRIMMER

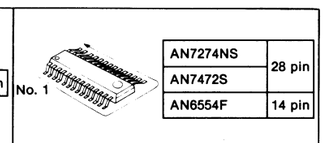
Ref. No.	Part No.	Part Code	Description
THERMISTORS AND VARISTORS			
TH102	ERTD2ZHL332S	001 191 0186 1	THERMISTOR
COILS AND TRANSFORMERS			
L101	ELEPK101KA	001 211 0855 8	CHOKE COIL
L202	SLA2B3-P	001 211 2249 6	ANTENNA COIL
L203	SL02B9R-P	001 211 2783 9	OSCILLATOR COIL
L204	SLQB20G-1P	001 211 2711 5	CHOCK COIL
L251	SLA1B7R-P	001 211 2779 5	ANTENNA COIL
L252	SL01B5-P	001 211 2782 0	OSCILLATOR COIL
L901, L902	RLQY25S5-0	001 210 1383 0	CHOKE COIL
T101	SLI4B520-Z	001 211 0628 7	I.F. TRANSFORMER
T102	SLI4B521-Z	001 211 0629 6	I.F. TRANSFORMER
T201	SLI2B104-M	001 215 2837 2	I.F. TRANSFORMER
T701 ⚠ (EX, EF, EB)	SLT5K171	001 202 8001 5	POWER TRANSFORMER
T701 ⚠ (EK)	SLT5K175	001 202 8002 4	POWER TRANSFORMER
FILTERS			
CF101	SVFE107MZ2-Q	001 241	CERAMIC FILTER
CF102	SVFE107MX2-Q	001 241 1128 0	CERAMIC FILTER
CF201	SVFSFZ450F7L	001 241 0429 4	CERAMIC FILTER
OSCILLATORS			
X901	SVQ43U452-D	001 250 1506 3	CRYSTAL OSC
DISPLAYS			
LCD	SALHLC9225-4	001 080 0277 7	LIQUID CRYSTAL DISPLAY
FRONT PACKS			
FE	SNVFE306E15	001 141 0539 6	FRONT END PACK
LAMPS			
PL1	XAMS15S150	002 351 0974 3	LAMP
FUSES			
F1 ⚠ (EK)	XBA2C05TB0	002 380 1350 2	FUSE, T0.5A 250V
F1 ⚠ (EX, EF, EB)	XBA2C05TR0	002 380 0395 3	FUSE, T0.5A 250V
SWITCHES			
S1, S2	SSG13	003 435 2951 9	SW, CH1-CH2
S3, S4	SSG13	003 435 2951 9	SW, CH3-CH4
S5, S6	SSG13	003 435 2951 9	SW, CH5-CH6
S7, S8	SSG13	003 435 2951 9	SW, CH7-CH8
S9, S10	SSG13	003 435 2951 9	SW, UP-DOWN
S11, S12	SSG13	003 435 2951 9	SW, MEMO-MODE
S13, S14	SSG13	003 435 2951 9	SW, MW-LW
S15	SSG13	003 435 2951 9	SW, FM
S701 ⚠	SSH1214	003 435 5649 0	SW., POWER,

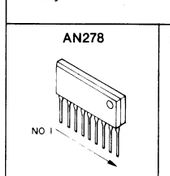
Ref. No.	Part No.	Part Code	Description
CABINET AND CHASSIS			
1 Ⓚ	SGWTG45AL-KE	016 840 7883 2	FRONT PANEL (K)
1 Ⓢ	SGWTG45AL-SE	016 840 8002 9	FRONT PANEL (S)
1-1 Ⓢ	SGU497-6	016 842 1678 9	FILTER
1-1 Ⓚ	SGU497-7	016 842 1717 9	FILTER
2	SUW3011	016 650 5196 4	BRACKET
3 Ⓢ	SBC817-1A	016 702 6498 2	BUTTON, PRESET
3 Ⓚ	SBC817A	016 702 6499 1	BUTTON, PRESET
4 Ⓚ	SBC810-4	016 702 6496 4	BUTTON, FUNCTION
4 Ⓢ	SBC810-5	016 702 6497 3	BUTTON, FUNCTION
5 Ⓢ	SBC812-1A	016 702 6452 6	BUTTON, BAND
5 Ⓚ	SBC812A	016 702 6455 3	BUTTON, BAND
6 Ⓚ	SGX7733	016 846 2908 0	ORNAMENT
6 Ⓢ	SGX7733-1	016 846 2497 8	ORNAMENT
7 Ⓚ	SGX7830-2	016 846 3228 3	ORNAMENT
7 Ⓢ	SGX7830-3	016 846 3284 5	ORNAMENT
8	SUW3002	016 650 5184 8	BRACKET
9 Ⓢ	SBC666	016 702 5545 6	BUTTON, POWER, POWER
9 Ⓚ	SBC666-5	016 702 6679 9	BUTTON, POWER
10 Ⓚ	SKC1710K99	016 800 2120 2	CABINET
10 Ⓢ	SKC1710S98	016 800 2121 1	CABINET
11	SHR9796	016 652 0607 6	PLASTIC SPACER
12	SDU249-1	016 842 0850 9	GALSS,TRANSPARENT PLATE
13	SMP408	016 632 1788 4	ANGLE
14	SHR415	016 652 0088 7	LOCK PIN
15	SJT347	003 410 1830 8	FUSE HOLDER
16	SHG1639	016 653 0657 1	RUBBER PARTS
17 ⚠	SJS9236	003 403 4660 7	AC SOCKET
18	SJF8615N	003 410 7262 4	TERMINAL BOARD
19	SUS803	016 726 0633 5	COIL SPRING
20	SHE181	016 918 0332 7	SPACER
21	SHE185	016 918 0330 9	SPACER
22	SGPG373A	016 840 6547 9	REAR PANEL
22	SNE55	003 410 1905 6	CONNECTOR
23	SKL304	016 828 0315 9	LEG,CASTER
24	XTB3+6FFZ	005 501 1590 3	SCREW
25	XTB3+12JFZ	005 501 2078 0	TAPPING SCREW
26	XTB3+10G	005 501 2647 9	SCREW
27 Ⓢ	SNE2129	005 500 8058 5	SCREW
27 Ⓚ	SNE2129-1	005 500 7938 6	SCREW
28	XTBS3+16F1	005 501 2606 8	TAPPING SCREW
29	XTBS3+8JFZ1	005 501 2523 0	SCREW
30	XTW3+8TFR	005 501 2602 2	SCREW
31	XTW3+8T	005 501 1358 9	SCREW
32	SJT30640LX-V	003 410 6149 8	CONNECTOR
33	SJT30940LX-V	003 410 6150 5	LUG TERMINAL
PACKINGS			
P1 (EX, EK, EB)	SPG5947	016 971 5104 6	CARTON BOX
P1 (EF)	SPG5948	016 971 5145 7	CARTON BOX
P2	SPS4550-7	016 977 3097 6	PAD
P3	SPS4551-4	016 977 2905 3	PAD
P4	SPS4552	016 977 1354 6	PAD
P5 Ⓢ	SPP697	016 978 0194 3	PROTECTION COVER
P5 Ⓚ	SPP725	016 978 0208 4	POLYETHYLENE SHEET
P6	XZB24X40C04	016 978 0232 4	POLYETHYLENE COVER
ACCESSORIES			
A1 ⚠ (EX, EF, EB)	SFDAC05E03	003 490 4809 5	POWER CORD
A1 ⚠ (EK)	SFDAC05G02	003 490 2613 3	POWER CORD
A2	SJP2249-1	003 492 6446 4	OUTPUT CORD
A3 (EK)	SJP9009	003 492 5594 7	PLUG
A4	SSA270M	002 390 1568 0	FM ANTENNA CORD
A5	SPB1152T	016 918 0624 8	ANTTENA
A6	SQF12889-2	016 983 5263 6	INSTRUCTION BOOK

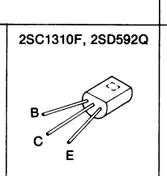
■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

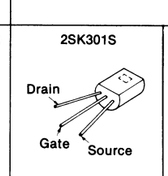


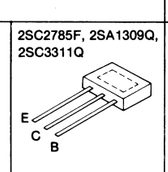


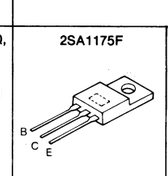


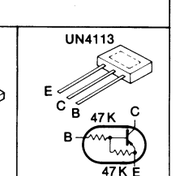


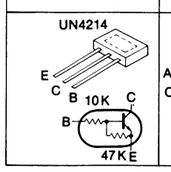


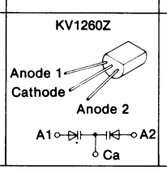


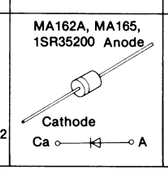


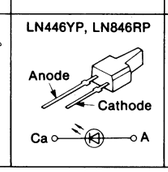


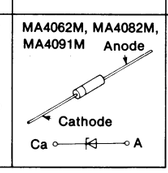






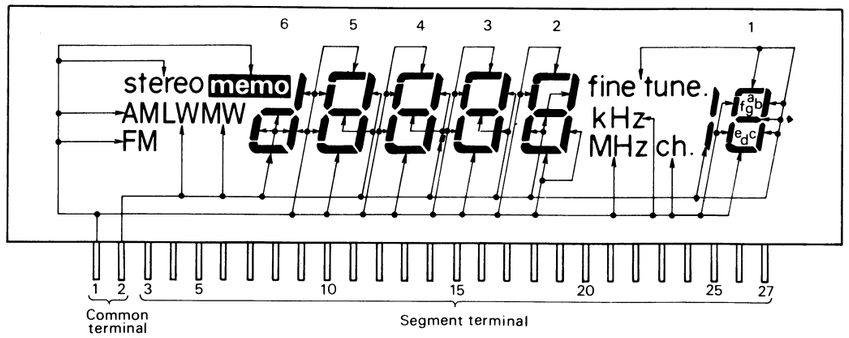




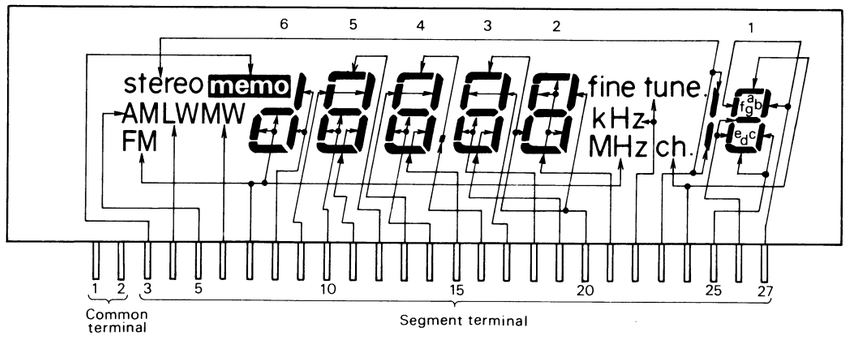


■ DESCRIPTION OF LCD PANEL

• COMMON



• SEGMENT

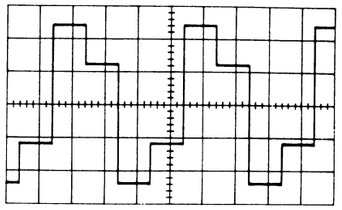


No.	1	2	3	4	5	6	7	18	9	10	11	12	13	14	15
COM1	COM1	—	MEMO	—	AM	—	FM, MHz	6b	5f	5e	5d	5a	4f	4e	4d
COM2	—	COM2	—	LW	—	MW	6deg	6c	5b	5g	5c	—	4b	4g	4c

No.	16	17	18	19	20	21	22	23	24	25	26	27
COM1	4a	3f	3e	3d	3a	2acdf	kHz	stereo	ch	1d	1e	1f
COM2	▰	3b	3g	3c	2bc	2g	fine tune	▰	1a	1c	1g	1b

< Segment ON >

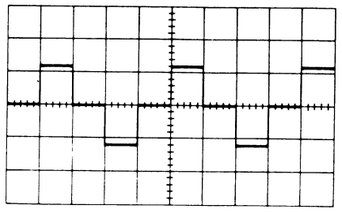
Pin ① or ② of LCD and each segment terminal.



2V AC/DIV, 5m sec/cm

< Segment OFF >

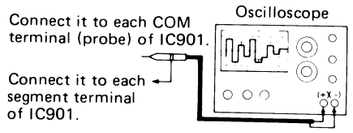
Pin ① or ② of LCD and each segment terminal.



2V AC/DIV, 5m sec/cm

• Each segment waveform measuring method

Note: Potential difference from COM terminal waveform is measured for each segment output waveform. So, do not connect the earth to other equipment on the oscilloscope side.
If the earth is connected, IC901 will break down.



■ SCHEMATIC DIAGRAM

Note 1:

- **S1~S8** : Preset tuning switch.
  [S1—CH1/9, S2—CH2/10, S3—CH3/11, S4—CH4/12
  S5—CH5/13, S6—CH6/14, S7—CH7/15, S8—CH8/16]
- **S9, S10** : Tuning switch.
  [S9 —down (tuning to lower frequency.)
  S10—up (tuning to higher frequency.)]
- **S11** : Memory switch.
  memory ↔ auto memory
- **S12** : FM mode selector.
  auto ↔ mono
- **S13~S15** : Band selector.
  (ST-G45AL only) (S13—MW, S14—LW, S15—FM)
- **S16, S17** : Band selector.
  (ST-G45A only) (S16—AM, S17—FM)
- **S701** : Power switch in "on" position. (power)
- **S702** : Voltage selector.
  (ST-G45A [XA] [PA] [PE] areas only)

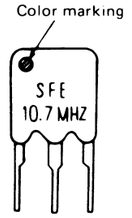
- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
  All voltage values shown in circuitry are DC voltage in FM signal (no signal) reception modes.
  * Figures in ( ) stand for DC voltage in AM (MW) signal reception mode.
  * Figures in (( )) stand for DC voltage in LW signal reception mode.
  * Figures in ▭ stand for muting mode.
- ——— Positive voltage lines. ▒▒▒ AF signal.
  ⇨ FM signal ⇨ FM OSC
  ➡ AM signal ➡ FM OSC
- Important safety notice.
  Components identified by ⚠ mark have special characteristics important for safety.
  When replacing any of these components, use only manufacturer's specified parts.

Part No.	Original Part No.	Supplyment Part No.
D901, D902	MA150	MA162A

Note 2:

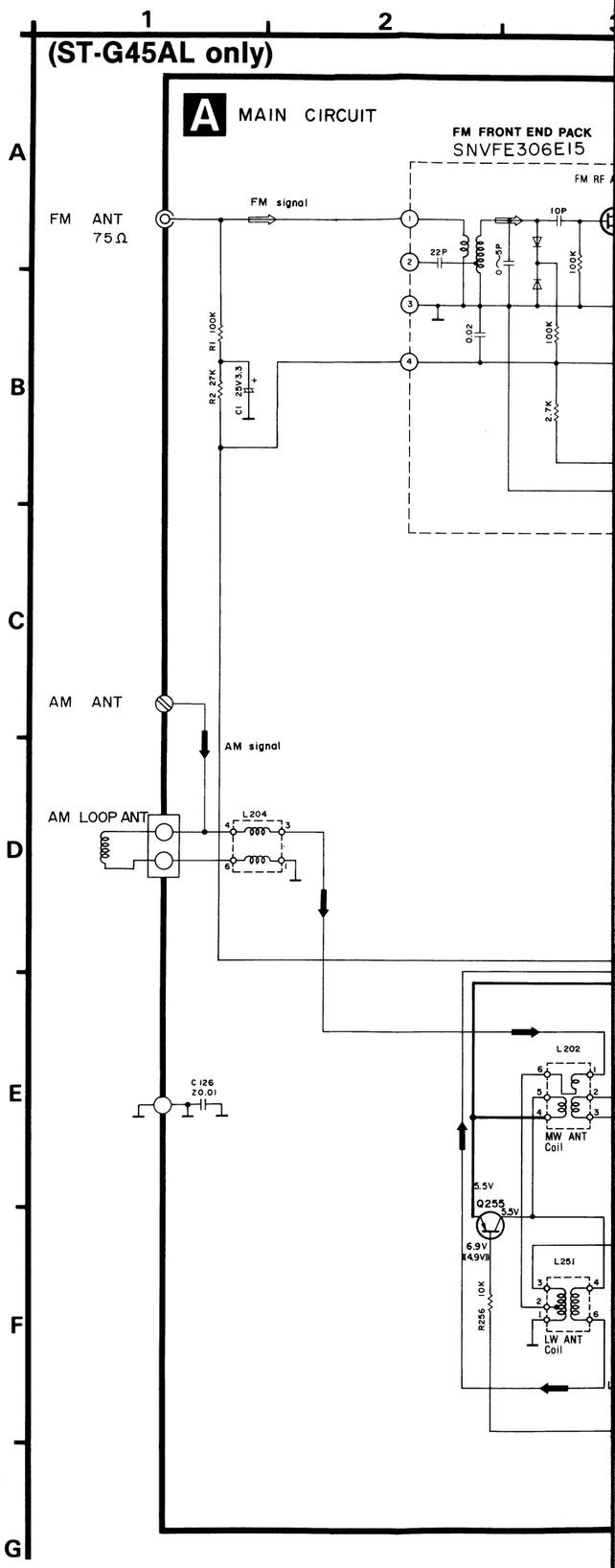
• Use of ceramic filters in pairs

The ceramic filters (CF101, CF102) for FM-IF circuit are available in two ranks.
For this machine, be sure to use the ceramics of the same rank in a pair. At repairing and replacement, pay close attention to the diode (D901, D902) for use as different diode must be used depending on each rank of the ceramic filters.



RANK (Color)	D901	D902
Black	○	×
White	×	○
Red	×	×

Note: ○ mark: Diode is used.
× mark: Diode is not used.



■ SCHEMATIC DIAGRAM

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  [S1—CH1/9, S2—CH2/10, S3—CH3/11, S4—CH4/12
  S5—CH5/13, S6—CH6/14, S7—CH7/15, S8—CH8/16]
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  [S9 —down (tuning to lower frequency.)
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  (ST-G45AL only) (S13—MW, S14—LW, S15—FM)
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  (ST-G45A only) (S16—AM, S17—FM)
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Part No.	Original Part No.	Supplyment Part No.
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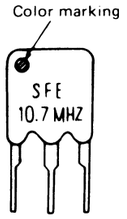


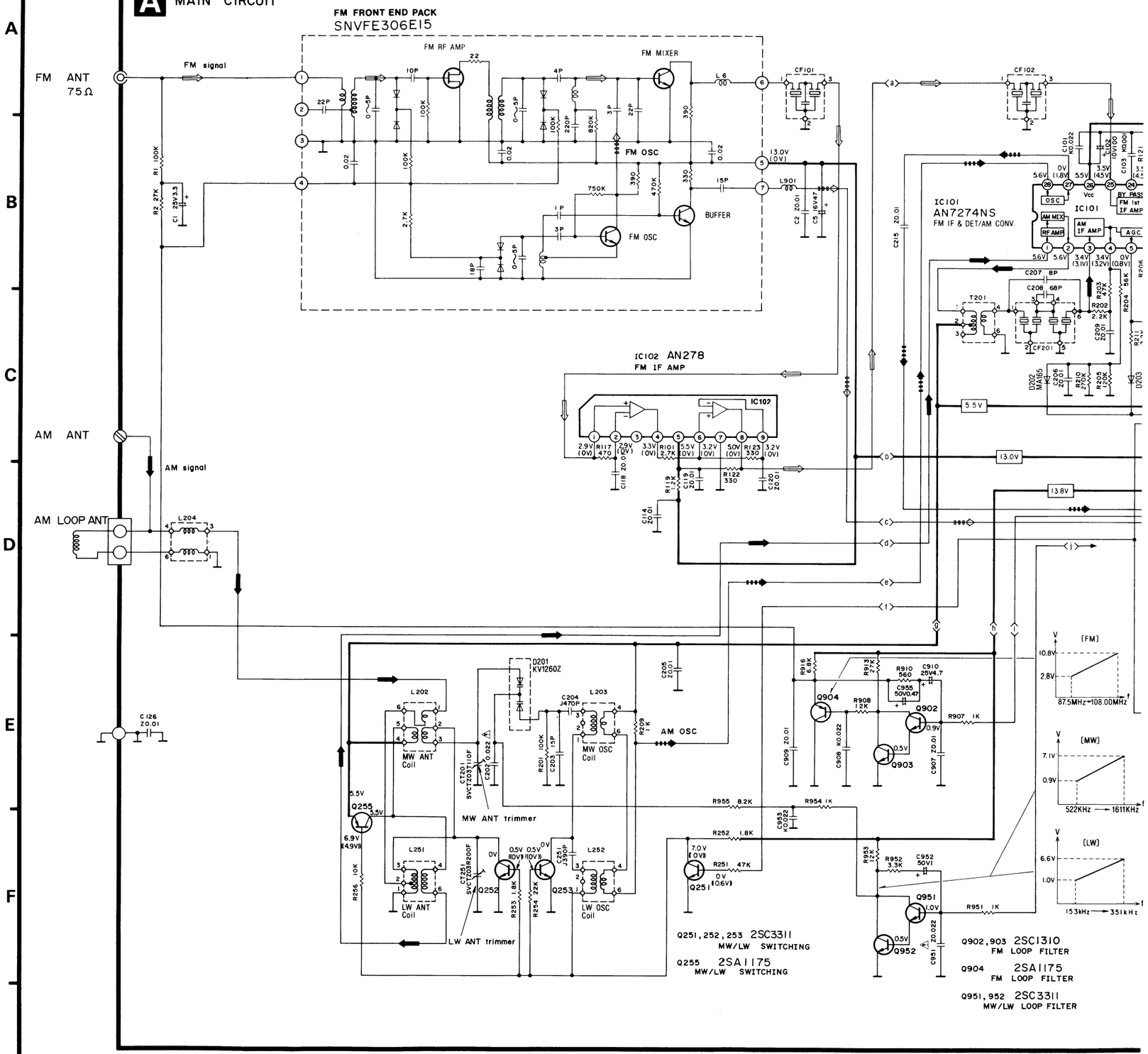
RANK (Color)	D901	D902
Black	○	×
White	×	○
Red	×	×

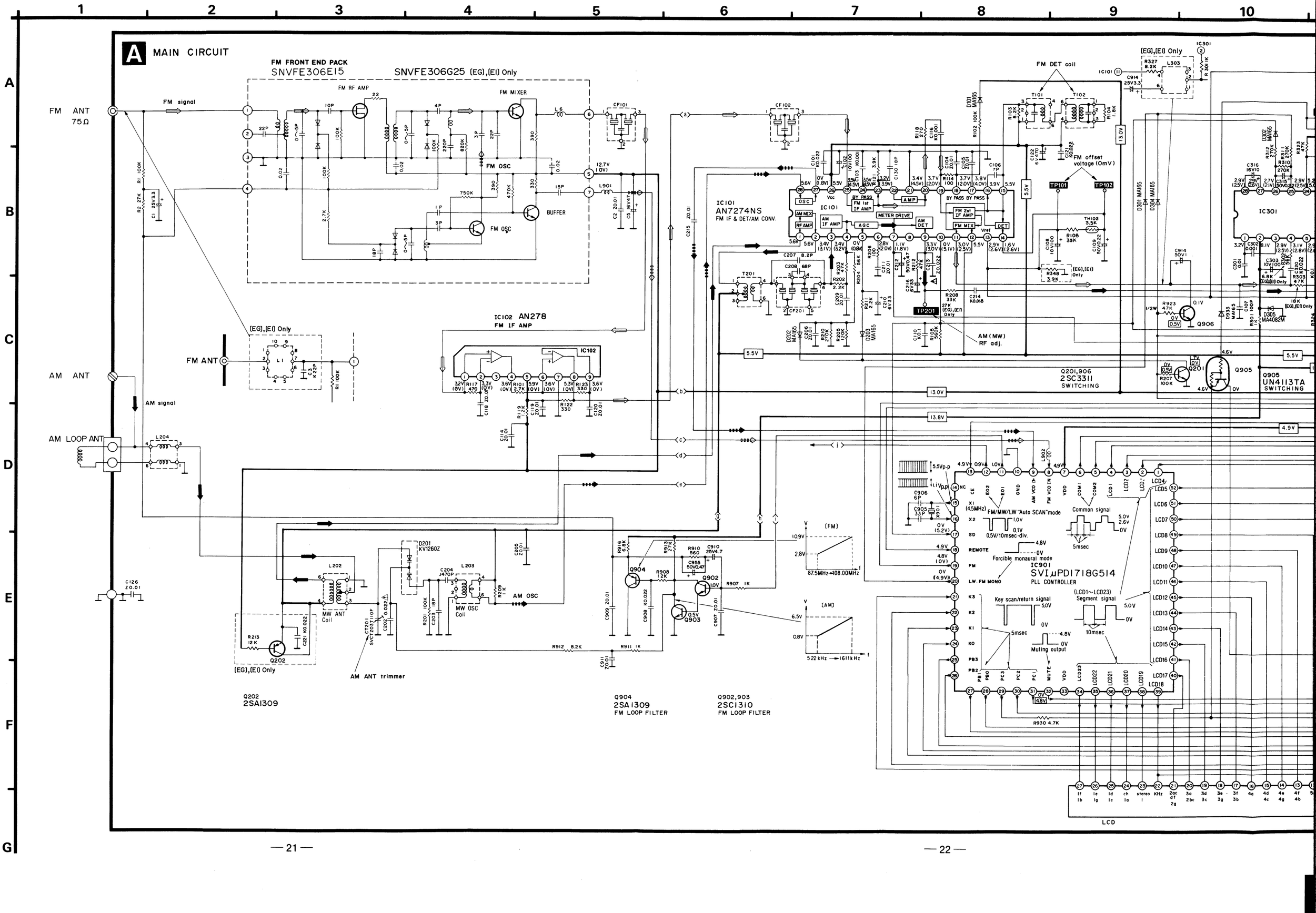
Note: ○ mark: Diode is used.
× mark: Diode is not used.

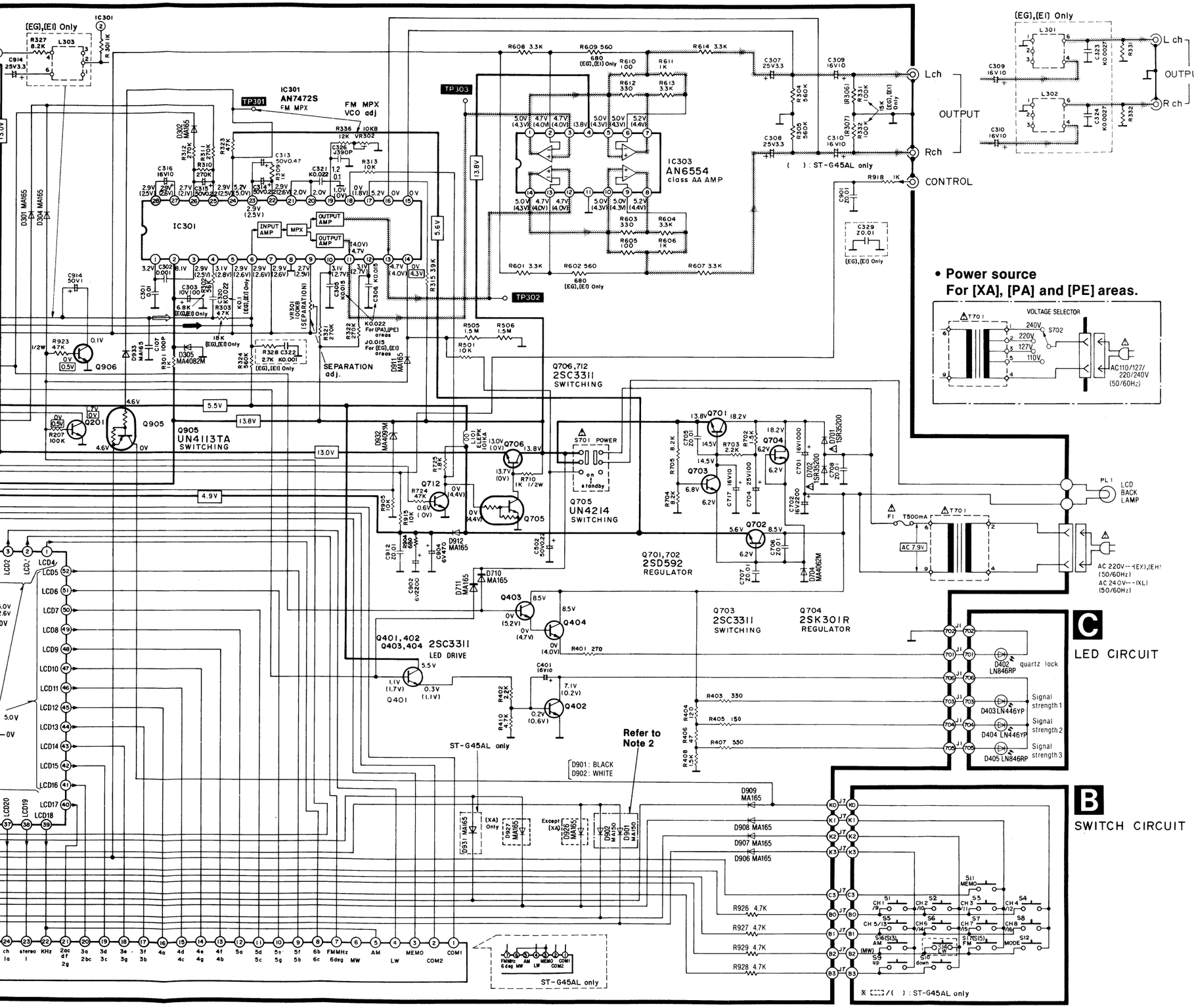
(ST-G45AL only)

A MAIN CIRCUIT

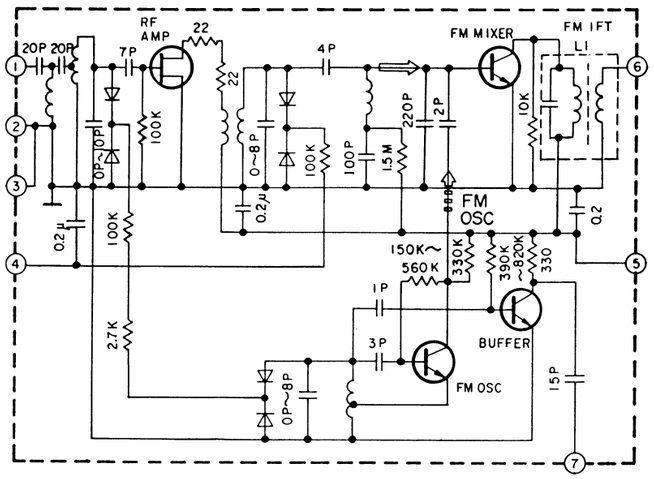
FM FRONT END PACK
SNVFE306E15




A MAIN CIRCUIT
FM FRONT END PACK
SNVFE306E15
SNVFE306G25 (EG),(EI) Only
FM ANT 75Ω
FM signal
FM RF AMP
FM MIXER
FM OSC
BUFFER
(EG),(EI) Only
FM ANT
AM ANT
AM signal
AM LOOP ANT
IC102 AN278
FM IF AMP
IC101 AN7274NS
FM IF & DET/AM CONV.
FM DET coil
FM offset voltage (0mV)
AM (MW) RF adj.
Q201,906 2SC3311 SWITCHING
Q905 UN4113TA SWITCHING
IC301 SVIμPDI718G514 PLL CONTROLLER
Key scan/return signal
Common signal
Segment signal
Muting output
Forcible monaural mode
FM/MW/LW "Auto SCAN" mode
LCD
MW ANT Coil
MW OSC Coil
AM OSC
AM ANT trimmer
Q202 2SA1309
Q904 2SA1309 FM LOOP FILTER
Q902,903 2SC1310 FM LOOP FILTER
— 21 —
— 22 —



• [EG, Ei] only FM FRONT END PACK SNVFE306G25



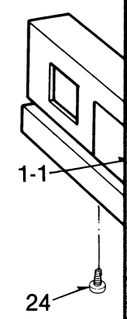
■ REPLACEMENT PARTS LIST

• Change of Parts List (ST-G45A from ST-G45AL)

Ref. No.	Change of Part No. ST-G45AL [EK]	Change of Part No. → ST-G45A [EX, EH, XL, XA, PA, PE, EG, Ei]	Part Name & Description	Pcs Set	Remarks
RESISTORS					
R208	ERDS2TJ333	**ERDS2TJ273**	27kΩ [EG, Ei] only	1	
R213	——	**ERDS2TJ123**	12kΩ	1	Addition
R251	ERDS2TJ473	——	——	—	Deletion
R252, 253	ERDS2TJ182	——	——	—	Deletion
R254	ERDS2TJ223	——	——	—	Deletion
R256	ERDS2TJ103	——	——	—	Deletion
R302	ERDS2TJ563	**ERDS2TJ682**	6.8kΩ [EG, Ei] only	1	
R303	ERDS2TJ473	**ERDS2TJ183**	18kΩ [EG, Ei] only	1	
R306, 307	ERDS2TJ104	——	——	—	Deletion
R327	——	**ERDS2TJ822**	8.2kΩ [EG, Ei] only	1	Addition
R328	——	**ERDS2TJ272**	2.7kΩ [EG, Ei] only	1	Addition
R331, 332	——	**ERDS2TJ153**	15kΩ [EG, Ei] only	1	Addition
		ERDS2TJ104	100kΩ [other]	1	Addition
R348	——	**ERDS2TJ392**	3.9kΩ [EG, Ei] only	1	Addition
R602, 609	ERDS2TJ561	**ERDS2TJ681**	680Ω [EG, Ei] only	2	
R911	——	**ERDS2TJ102**	1kΩ	1	Addition
R912	——	**ERDS2TJ822**	8.2kΩ	1	Addition
R951	ERDS2TJ102	——	1kΩ	—	Deletion
R952	ERDS2TJ332	——	3.3kΩ	—	Deletion
R953	ERDS2TJ123	——	12kΩ	—	Deletion
R954	ERDS2TJ102	——	1kΩ	—	Deletion
R955	ERDS2TJ822	——	8.2kΩ	—	Deletion
CAPACITORS					
C203	ECCD1H150KC	**RCBS1H180JCY**	18PF	1	
C221	——	**ECQM1H223JZ**	0.01μF	1	Addition
C251	ECQP1391JZ	——	——	1	Deletion
C305, 306	ECQM1H153JZ	**ECQM1H223JZ**	0.022μF [PA, PE] only	1	
		ECQB1H153JZ	0.015μF [EG, Ei] only	1	
C322	——	**ECQM1H102JZ**	0.001μF [EG, Ei] only	1	Addition
C323, 324	——	**ECFTD272KXL**	0.0027μF [EG, Ei] only	1	Addition
C329, 911	——	**ECKD1H103PF**	0.01μF [EG, Ei] only	2	Addition
C951	ECKD1H223PF	——	——	—	Deletion
C952	ECEA1HU010	——	——	—	Deletion
C953	ECQM1H223JZ	——	——	—	Deletion
TRANSISTORS					
Q251~253	2SC3311A-Q	——	——	—	Deletion
Q255	2SA1175FE	——	——	—	Deletion
Q904	2SA1175FE	**2SA1309AQS**	——	1	
Q951, 952	2SC3311A-Q	——	——	—	Deletion
DIODES					
D926	MA165	——	[XA] only	—	Deletion
D927	——	**MA165**	[XA] only	1	Addition
D931	MA165	——	——	—	Deletion
VARIABLE CAPACITORS					
CT251	SVCTZ03R200F	——	——	—	Deletion
COILS AND TRANSFORMERS					
L202	SLA2B3-P	**SLA2B1-1M**	ANTENNA COIL	1	
L203	SLO2B9R-P	**SLO2B7-M**	OSCILLATOR COIL	1	

Ref. No.	Change of Part No. ST-G45AL [EK]	Change of Part No. → ST-G45A [EX, EH, XL, XA, PA, PE, EG, Ei]	Part Name & Description	Pcs Set	Remarks
L251	SLA1B7R-P	——	——	—	Deletion
L252	SLO1B5-P	——	——	—	Deletion
L301, 302	——	**SLM5B2-1P**	[EG, Ei] only L.P.F.	2	Addition
L303	——	**SLM1B1-P**	[EG, Ei] only L.P.F.	1	Addition
L701	——	**SLQZ650MH49**	[EG, Ei] only CHOKE COIL	1	Addition
T701	SLT5K175	**SLT5K171**	[EX, EH, EG, Ei] only POWER TRANSFORMER	1	⚠
		SLT5K173	[XA, PA, PE] only POWER TRANSFORMER	1	⚠
		SLT5K175	[XL] only POWER TRANSFORMER	1	⚠
FRONT PACKS					
FE	SNVFE306E15	**SNVFE306G25**	[EG, Ei] only FRONT END PACK	1	
FUSES					
F1	XBA2C05TB0	**XBA2C05TR0**	250V, T0.5A	1	⚠
SWITCHES					
S13~15	SSG13	——	——	—	Deletion
S16, 17	——	**SSG13**	SW, AM/FM	2	Addition
S702	——	**SSR187-1**	[XA, PA, PE] only VOLTAGE SELECTOR	1	Addition
CABINET AND CHASSIS					
1	SGWTG45AL-KE	**SGWTG45A-KE**	FRONT PANEL (K)	1	
1	SGWTG45AL-SE	**SGWTG45A-SE**	FRONT PANEL (S)	1	
5	SBC812A	**SBC811A**	BUTTON, BAND (K)	1	
5	SBC812-1A	**SBC811-1A**	BUTTON, BAND (S)	1	
17	SJS9236	**SJS9231-1B**	[EG, Ei] only AC SOCKET	1	⚠
18	SJF8615N	**SJF8714N**	[XL, XA, PA, PE] only TERMINAL BOARD	1	
22	SGP6373A	**SGP6373B**	[XL] only REAR PANEL	1	
		SGP6373-1A	[XA, PA, PE] only REAR PANEL	1	
		SGP6373-2A	[EG] only REAR PANEL	1	
		SGP6373-2F	[Ei] only REAR PANEL	1	
34	——	**SUS772**	[PA, PE, EG, Ei] only SPRING	1	Addition
35	——	**XTBS3+20F1**	[EG, Ei] only SCREW	1	Addition
36	——	**SJS9231A**	[EG, Ei] only SOCKET COVER	1	Addition
PACKINGS					
P1	SPG5947	**SPG5945**	[XL] only CARTON BOX	1	
		SPG5946	[Ei] only CARTON BOX	1	
		SPG5944	[other] CARTON BOX	1	
P2	SPS4550-7	**SPS4550-1**	[XL] only PAD	1	
P3	SPS4551-4	**SPS4551-1**	[XL] only PAD	1	
P7	——	**SPS4672**	[XL] only PAD	1	Addition
ACCESSORIES					
A1	SFDAC05G02	**SFDAC05E03**	[EX, EH, EG, Ei] only POWER CORD	1	⚠
		SJA163	[XL] only POWER CORD	1	⚠
		SJA168-1	[XA, PA, PE] only POWER CORD	1	⚠
A3	SJP9009	**SJP9215**	[XA, PA, PE] only PLUG	1	
A4	SSA270M	**SSA269M**	[XL, XA, PA, PE] only FM ANTENNA CORD	1	
A6	SQF12889-2	**SQF12891**	[PA, PE] only INSTRUCTION BOOK	1	
		SQF12890	[EG] only INSTRUCTION BOOK	1	
		SQF12894	[Ei] only INSTRUCTION BOOK	1	

■ EXPLO



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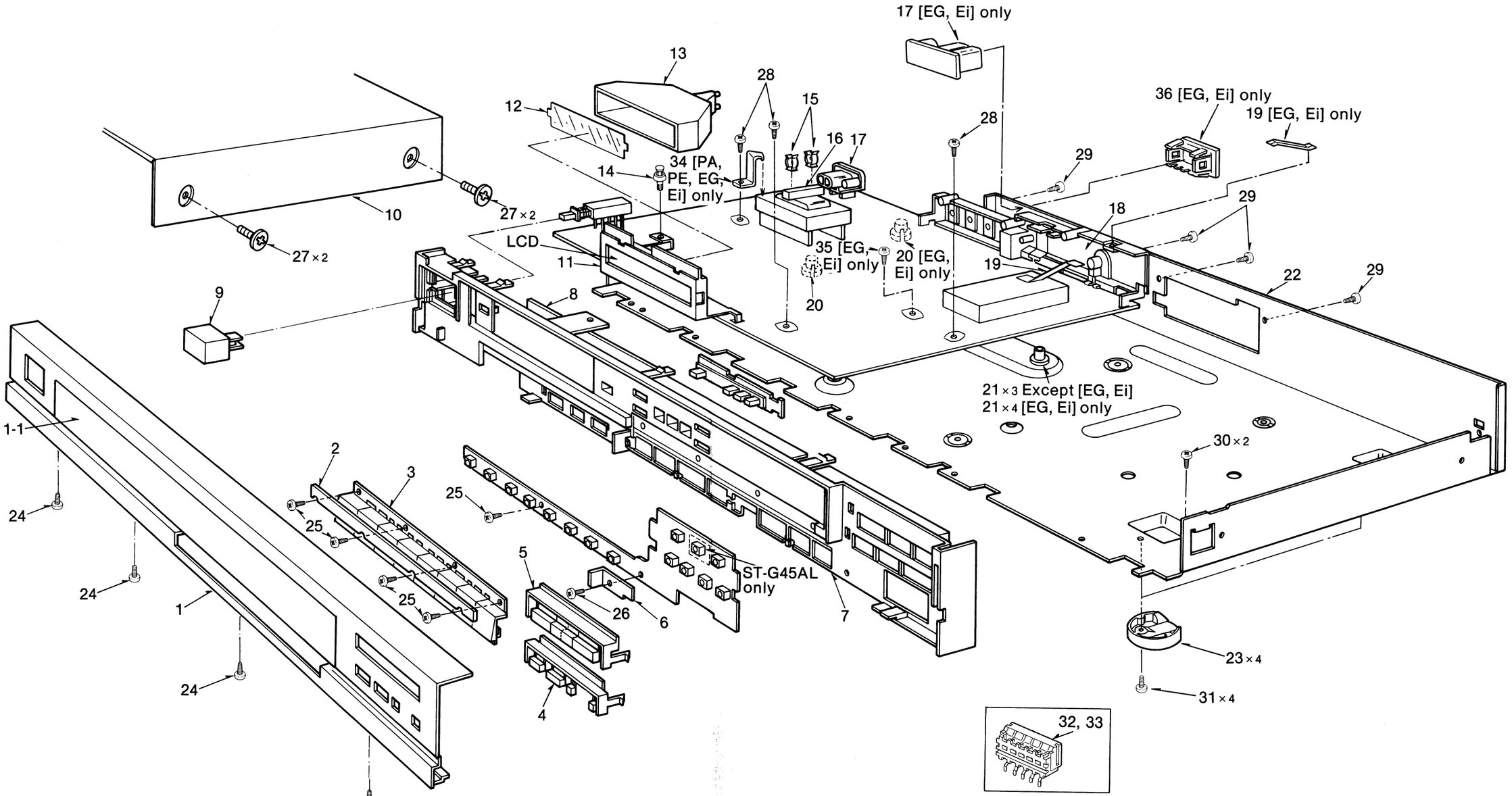
■ EXPLODED VIEW



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